DOCUMENT RESUME

ED 142 716 CE 011 545

AUTHOR Griffin, Larry J.
TITLE Social Background, Schooling, and Labor Market Experiences: The Reproduction of Socioeconomic Inequality from Generation to Generation.
INSTITUTION Manpower Administration (DOL), Washington, D.C.
PUB DATE 76
GRANT DL-91-24-76-10
NOTE 368p.; Ph.D. Dissertation, Johns Hopkins University
AVAILABLE FROM National Technical Information Service, Springfield, Virginia 22151

EDRS PRICE MF-$0.83 HC-$19.41 Plus Postage.
DESCRIPTORS Academic Achievement; *Educational Experience; *Employment Experience; Employment Qualifications; *Family Influence; Family Status; *Income; *Job Satisfaction; Labor Market; Males; Models; Occupational Mobility; Psychological Characteristics; Psychological Needs; Religious Differences; Social Background; Social Disadvantagement; *Socioeconomic Background; Socioeconomic Status; Success Factors

ABSTRACT

A study was conducted to identify important background, schooling, and labor force participation determinants of socioeconomic achievement (occupational position, earnings, work satisfaction). Two questions underlaid the analyses: Does social background directly affect material and psychological success in the labor market? And, if so, what are the specific schooling and market mechanisms which are responsible for the intergenerational transmission of inequality? The analyses dealt with these issues as they relate to a series of life-cycle models of the "stratification process" and a specific data set consisting of 947 white men, first surveyed as high school sophomores in 1955 and followed up in 1970. The socioeconomic life-cycle model was used to explain the observed relationship between social background and educational and labor market achievements. It was found that only educational attainment substantially affected occupational achievement, but social background (parental income and religious background), years of schooling completed, and several postschool "human capital investments" positvely affected annual earnings. Among the more important labor market experiences were current job experience, labor supply, and on-the-job training. Work satisfaction, and other indicators of psychological success in the work place, were largely impervious to these antecedent statuses and experiences. Psychological success, however, was modestly affected by material success. (NTIS/TA)

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Social Background, Schooling, and Labor Market Experiences: The Reproduction of Socioeconomic Inequality from Generation to Generation

by

Larry J. Griffin

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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A dissertation submitted to The Johns
Hopkins University in conformity with
the requirements for the degree of
Doctor of Philosophy

Baltimore, Maryland

1976

CE 011 545

BIBLIOGRAPHIC DATA SHEET

1. Report No. 91-24-76-10-1

2.

3. Recipient's Accession No.

4. Title and Subtitle
SOCIAL BACKGROUND, SCHOOLING, AND LABOR MARKET EXPERIENCES: THE REPRODUCTION OF SOCIOECONOMIC INEQUALITY FROM GENERATION TO GENERATION

5. Report Date 11/4/76

6.

7. Author(s) LARRY J. GRIFFIN

8. Performing Organization Rept. No.

9. Performing Organization Name and Address
THE JOHNS HOPKINS UNIVERSITY
BALTIMORE, MD. 21218

10. Project/Task/Work Unit No.

11. Contract/Grant No. DL 91-24-76-10

12. Sponsoring Organization Name and Address
U.S. Department of Labor
Manpower Administration
Office of Manpower Research and Development
601 D Street, N.W., Washington, D.C. 20213

13. Type of Report & Period Covered FINAL

14.

15. Supplementary Notes
This report is the author's doctoral dissertation in sociology.

16. Abstracts The purpose of the study was to identify important background, schooling, and labor force participation determinants of socioeconomic achievement (i.e., occupational position, earnings, work satisfaction). It was found that only educational attainment substantially affected occupational achievement, but social background (i.e., parental income and religoius background), years of schooling completed, and several post-school "human capital investments" positively affected annual earnings. Among the more important labor market experiences were current job experience, labor supply, and on-the-job training. Work satisfaction, and other indicators of psychological success in the work place, were largely impervious to these antecedent statuses and experiences. Psychological success, however, was modestly affected by material success.

17. Key Words and Document Analysis. 17a. Descriptors
Earnings; Job satisfaction; schools; socioeconomic status

17b. Identifiers/Open-Ended Terms
socioeconomic achievement models; inequality

17c. COSATI Field/Group Sociology, 5-k; Economics, 5-c

18. Availability Statement Distribution is unlimited.
Available from National Technical Information Service, Springfield, Va. 22151.

19. Security Class (This Report) UNCLASSIFIED

20. Security Class (This Page) UNCLASSIFIED

21. No. of Pages 335

22. Price

THIS FORM MAY BE REPRODUCED

"The material in this project was prepared under Grant No. 91-24-76-10 from the Manpower Administration, U.S. Department of Labor, under the authority of title I of the Manpower Development and Training Act of 1962, as amended. Researchers undertaking such projects under Government sponsorship are encouraged to express freely their professional judgement. Therefore, points of view or opinions stated in this document do not necessarily represent the official position of the Department of Labor."

ABSTRACT

While the substantive issues in the study of labor market success necessarily cut across a number of disciplinary boundaries, traditional insularities and data limitations often constrain research to an artificial division of labor. With but a few exceptions, "human capital" and earnings are customarily considered the province of economists; social origins, educational attainment, and occupational status the domain of sociologists; and job characteristics and work satisfaction the subject matter of vocational and occupational psychologists. That a thorough understanding of the processes generating these labor market achievements would require simultaneous consideration of each of these "rewards of work" is the basic assumption of the present analysis.

Two questions underlie all of the analyses presented in this study: does social background directly affect material and psychological success in the labor market? And, if so, what are the specific schooling and market mechanisms which are responsible for the intergenerational transmission of inequality? The present analysis deals with the two

issues as they relate to a series of life-cycle models of the "stratification process" and a specific data set consisting of 947 white men, first surveyed as high school sophomores in 1955 and followed-up in 1970.

Estimation of a "basic model" of socioeconomic achievement demonstrated the modest importance of status origins and religious background in indirectly and directly affecting adult education and labor market outcomes. Even net of academic ability, men with "advantageous" social backgrounds complete more schooling, attain more desirable and higher status jobs, and earn more income. I found, however, that the status origin-education linkage was primarily, but not exclusively, due to the fact that men from higher status backgrounds receive, or are exposed to, more academic and social-psychological supports, either institutional or interpersonal. These same "school process" variables "account for" approximately half of the influence of status origins on occupational achievement, as that latter variable was measured either by occupational status or the complexity of work and training and skill demands of the respondent's occupation.

The results of a social-psychological interpretation of achievement, however, were less impressive when post-schooling labor market experiences and work's economic and emotional outcomes were considered. These labor market activities and achievements were almost impervious to social-psychological and school processes. Moreover, while work experience, on-the-job training, and labor supply enhanced earnings, and indirectly stimulated psychological success (via earned income), these post-schooling activities did not account for the direct effect of parental income on son's annual earnings. There does appear to exist, then, an "inheritance of earnings potential" and this process seems to operate independently of school and labor market mechanisms.

Finally, these analyses indicated that inequalities in social origins have essentially no bearing, either directly or indirectly, on work satisfaction or the realization of other occupational values. Psychological rewards or subjective outcomes, therefore, are the most egalitarian labor market outcomes studied. More elaborate models of psychological success, containing a myriad of background, schooling, and labor market experiences and achievements, also explained only minor proportions of the inequality in psychological success or subjective outcomes.

ACKNOWLEDGEMENTS

Karl Alexander served as the principal reader of this thesis and, over the course of three years, he has unhesitatingly shared his data, his time, and his ideas with me. The instigation, continuation, and completion of the research presented here owe a tremendous amount to him. My intellectual and professional debt to him is considerable and, for all of that and more, I express my deepest appreciation.

James Fennessey, as second reader, also contributed to this project in a variety of valuable ways.

A number of people at Hopkins and elsewhere have been instrumental in my education and/or have influenced me and my orientation toward sociology. Among the most important are Edward McDill, Doris Entwisle, Susan Radius, Martha Cook, Larry DeBord, and Charles Mallar. To these individuals, I express my heartfelt gratitude.

My parents, Joe and Lois Griffin, gave of scarce resources in order to facilitate my "achievement." In a very real sense, their treatment by an insensitive America served

as the motivation for this research.

This research was supported by the National Institute of Mental Health, The Department of Labor, and The Center for the Social Organization of Schools, The Johns Hopkins University.

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Chapter 1

STATEMENT AND ELABORATION OF THE PROBLEM

1.1 Purpose of the Dissertation

The transmission of social and economic inequality from generation to generation is the subject matter of this research. My purpose is to assess the degree to which and the manner in which male workers' socioeconomic origins influence their socioeconomic achievements. Schooling and labor market experiences are considered "career contingencies" and their role as mediating influences linking status origins and status destinations is evaluated in models synthesizing social-structural and social-psychological perspectives on socioeconomic achievement processes. These research interests are elaborated, and my specific analytic objectives described, in the following sections.

1.2 Achievement in the Labor Market -- Multiple Outcomes

Recent empirical research in sociology and economics has been devoted to delineating the sources of influence affecting the achievement of occupational status (or prestige) and earnings or income. Sewell and Hauser (1975: 43) correctly remark that an elaborate justification for concern with these particular dependent variables is unnecessary: occupation and earnings, together with education, most clearly determine the social and economic well-being of individuals and most sharply define the broad outline of a society's stratification structure (see also the discussion in Morgan, et al., 1962, and Hodge, 1970).

The rewards accruing to the performance of occupational roles are not limited to the achievement of earnings, however. A basic assumption of this study is that just as labor markets distribute socioeconomic rewards to job incumbents, they also distribute non-monetary and subjective outcomes of work, such as work complexity, status, and job satisfaction. Indeed, the concept of "psychic income," or non-monetary rewards of work, is a cornerstone of orthodox, dual, and radical theories of labor markets (Bowles and Gintis, 1975c; Cain, 1975; Fleisher, 1970; Gordon, 1972a, 1972b; Osterman, 1975). An individual's work-related attitudes and behaviors -- including occupational preferences, seeking or acceptance of training, and labor force participation and supply -- are theorized to be due, in part, to the interplay of monetary and non-monetary attributes of jobs.

Not only are non-monetary job attributes of theoretical importance, but the expressed preferences and values of employed adults as to the sort of rewards they are pursuing in the labor market indicate that these subjective, nonpecuniary work outcomes are of considerable practical importance to workers. The results of recent national surveys conducted by the University of Michigan suggest, for example, that workers may value "interesting work" more than work which offers good pay, job security, or good fringe benefits (Quinn, Stanes, and McCullough, 1974). Also highly valued by both white and blue collar employees are jobs which allow workers authority, the opportunity to develop abilities, and to see the results of their work (Quinn, Stanes, and McCullough, 1974). Table 1.1 presents the percentage of workers rating selected job characteristics as "very important" (see Quinn, Stanes, and McCullough, 1974: 16).

The data presented in Table 1.1 are based on Michigan's "Quality of Employment" Survey. Similar results are obtained in the data to be analyzed in this research. These results are based on the responses of employed men to the following question: "Which one of the above characteristics is the most important to you in choosing a job?" The following attributes were most frequently chosen: "steady employment" (10.3%); "stable, secure future" (16.7%); "good chance for making money" (7.9%); "creative work" (4.6%); "challenging work" (13.7%); "important work" (7.7%); and

TABLE 1.1

Percentage of Workers Rating Job Facets as "Very Important" to Them

Job Facet	White-collar Workers (N=730)	Blue-collar[1] Workers (N=685)
FINANCIAL REWARDS		
Pay	57.4	72.5
Job security	54.2	71.5
Fringe benefits	39.7	62.4
CHALLENGE		
Interesting work	78.5	58.2
Enough authority	66.8	63.5
Opportunity to develop abilities	69.4	57.2
See the results of work	60.0	63.8
Chance to do things I do best	54.0	55.0
Freedom to decide how I do my work	56.4	49.8
Challenging problems	31.2	29.3

[1] Farmworkers have been excluded.

SOURCE: 1969-70 Survey of Working Conditions
(Quinn, Stanes, and McCullough, 1974)

"interesting work" (6.7%). For roughly one-third of the men in our sample, therefore, non-monetary attributes of jobs are valued most highly, while for another third more material considerations are judged most important. Although the questions used by the two surveys (Michigan and ours) differ, and hence the nature of the responses necessarily differs, the consistency of the results is unambiguous: non-monetary and/or subjective work rewards are highly valued by workers, rivaling the valuation of economic and career considerations.

I am arguing, then, that labor market success or achievement involves at least three conceptually distinct, though empirically related, dimensions: the characteristics of the job or occupation in which the individual is employed; the amount of income earned in the market by one's labor; and the subjective evaluation of, and emotional reaction to, these tangible job outcomes.

Discussion of the advantages and limitations of the various analytical perspectives utilized by researchers interested in the determination of socioeconomic achievement follows in section 1.3 below.

1.3 Perspectives on Labor Market Achievement

While the substantive issues in the study of labor market success necessarily cut across a number of disciplinary boundaries, traditional insularities and data limitations often constrain research to an artificial division of labor. With but a few exceptions, "human capital" and earnings are customarily considered the province of economists; social origins, educational attainment, and occupational status the domain of sociologists; and job characteristics and work satisfaction the subject matter of vocational and occupational psychologists. That a thorough understanding of the processes generating these labor market achievements would require simultaneous consideration of each of these "rewards of work" is the basic assumption of the present analysis. I will pursue this goal by incorporating into socioeconomic achievement or status attainment models such post-schooling activities as job seniority, labor market experience, and vocational training.

1.3.1 Socioeconomic Life-Cycle Modeling

The socioeconomic life-cycle framework, developed by Duncan and his associates (Duncan, 1968; Duncan and Hodge, 1963; Blau and Duncan, 1967; Duncan, Featherman, and Duncan, 1972) and fully elaborated by Sewell and his colleagues at Wisconsin (Sewell, Haller, and Portes, 1969; Sewell and Hauser, 1972, 1975), considers sources of influence embedded in the various institutional settings that individuals "pass through" in the transition from childhood to adolescence and from adolescence to adulthood: the family of origin, the school, and the labor market. Earlier experiences are thought to temper later ones such that outcomes at any point in the life-cycle are a complex function of the various critical life events that precede them. Socioeconomic life-cycle modeling is not a theory, but rather a conceptual-analytic strategy for conducting research on the sequential patterning of psychosocial and socioeconomic career histories and on the progressive development of individuals.

Although life-cycle modeling could be utilized to investigate the full array of familial, schooling, and labor market experiences of individuals, its empirical applications have concentrated on earlier childhood and adolescent developmental stages, with only incidental or occasional forays into adult experiences. When compared to the perspectives adopted by economists, this concentration on familial and schooling processes embodies both the advantages and limitations of socioeconomic life-cycle modeling.

1.3.1(a) Advantages

Because applications of life-cycle modeling have concentrated so heavily on schooling processes, the most convincing successes of this approach have been in the area of educational attainment. Complex and rather powerful structural models of the educational attainment process have recently been developed and estimated (Sewell and Hauser, 1972, 1975; Alexander and Eckland, 1974, 1975a). These models are variants of the so-called "Wisconsin" model, first specified by Sewell, Haller, and Portes (1969). The social-psychological model of Sewell and his associates does not test any formal theory; rather it is grounded in several rather loose theoretical perspectives concerning the antecedents of ambition and aspirations and some general social-psychological concepts (such as "reference groups") and propositions.

These inquiries have demonstrated the sensitivity of education to family background, ability, tracking, and social psychological supports and motivations, no one of which is of overriding importance but which together explain about 50 percent of the variance in years of schooling completed. As Sewell, Haller, and Portes (1969) observe, research of this sort is useful both for theoretical reasons and for identifying the crucial points in the "school career" of the adolescent or young adult at which policy intervention -- to facilitate educational attainment, for example -- would be most effective. Thus, reasonably successful analyses of one important dimension of human capital investment, or skill acquisition, namely schooling, have already been conducted within the socioeconomic life-cycle framework. In view of its demonstrated utility in explicating the process of educational attainment, life-cycle analyses of other forms of job preparation and participations (on-the-job training, work experience, and labor supply) may further our understanding of the mechanisms generating these marketable skills.

Since the prime concern of the proposed research is in "explaining" the observed relationship between social background and educational and labor market achievements, the value of socioeconomic life-cycle modeling for estimating precisely how adolescent schooling experiences serve to link status origins with status attainments is especially important. In the Wisconsin data analyzed by Sewell and Hauser (1975), for example, around 70 percent of the total impact of social class on educational attainment was mediated by the intervening variables included in the social-psychological model. Hence, socioeconomic life-cycle modeling is useful not only for assessing the impact of a variety of social-structural and social-psychological determinants of labor market skills or activities, but also in "explaining" how and why adults with differing status backgrounds come to acquire widely varying quantities and qualities of human-capital.

1.3.1(b) Limitations

As I noted above, in its most general form life-cycle modeling is devoid of substantive content. Specific theoretical hypotheses (e.g.; the "Wisconsin" model) may be investigated within the life-cycle modeling framework, but the modeling approach per se offers no theory of achievement.[1] Although status attainment researchers have developed complex theories of schooling processes, little effort has been devoted to specifying theories of labor market behavior and achievement. Rather, labor market outcomes of interest to economists, especially earnings, have been simply "tagged" on to educational attainment models. And as a result, these life-cycle earnings models have achieved only modest explanatory power, with R^2's on the order of 0.05-0.20 (see Sewell and Hauser, 1972, 1975; Duncan and Featherman, 1972; Alexander, Eckland, and Griffin, 1975; Griffin, 1976a; Jencks, 1972; Spaeth, 1976a). The inescapable inference, therefore, is that the life-cycle models of earnings employed by status attainment researchers are woefully incomplete; an unknown, but not trivial, component of the residual variation in earnings may be due to systematic differences in labor market experiences.

Socioeconomic life-cycle analyses of labor market success, though deficient in the ways just suggested, have nevertheless uncovered important determinants of earnings not generally considered by, and outside the scope of, human capital theory.[2] For example, Otto and Featherman (1975), using a model conceptually similar to that represented by Sewell's, found that "extracurricular activities" in high school significantly influenced income, even independently of many other background and attainment variables. And in both Sewell and Hauser's (1972, 1975) Wisconsin data and in our data (Griffin, 1976a), a thousand dollar increment in parental income is worth $110 in son's annual earnings (note: not income). This is net of three other indices of socioeconomic origins, academic ability, and achieved educational and occupational statuses. The standardized regression coefficient indicates that this variable is relatively more influential than schooling and as important as occupational status. This finding -- labelled the "direct social inheritance of earnings performance" by Sewell and Hauser -- speaks to the continued importance of socioeconomic status origins in the determination of labor market success (see also Alexander, Eckland, and Griffin, 1975).[3] Therefore, sociological life-cycle models of earnings differentials, which "exhaust the influence of fundamental conditions of ascription and achievement" (Sewell and Hauser, 1975: 184) should not be ignored; instead, these models should be modified so as to incorporate adult labor market experience variables for a more complete understanding of the processes leading to socioeconomic achievement and inequality. Ultimately, of course, improved and enlarged life-cycle models of labor market outcomes depend upon an adequate theoretical specification of the processes governing these outcomes. This concern leads me to a discussion of theoretical perspectives and variables employed by economists.

1.3.2 Labor Economics

Labor economists generally interpret personal inequalities in socioeconomic achievement as deriving from differences in the quality and quantity of productive skills, which are generally acquired as young adults. While this is especially true among those economists working in the area of human capital theory (Mincer, 1958, 1962, 1970, 1974; Becker, 1964; Hanoch, 1967; Flanagan, 1974), economists using alternative perspectives also stress the importance of post-schooling experiences in affecting labor market achievement (Bowles and Gintis, 1975c; Piore, 1973; Gordon, 1972a; Wachter, 1974;

Harrison, 1972; Doeringer and Piore, 1971), though they interpret the effects of these variables quite differently.

1.3.2(a) Advantages

The perspectives used by labor economists may prove useful for the sociological study of socioeconomic achievement or labor market success for the following reasons. First, these theories may provide a rigorous theoretical interpretation of the empirical results obtained in stratification models. Consider, for example, the pronounced influence of education in placing men in the occupational status hierarchy, a finding repeatedly documented by status attainment researchers. Human capital theorists would argue that highly educated individuals are potentially more productive (from the employer's perspective) and thus are more likely to be hired for higher status and higher paying jobs (Becker, 1964; Mincer, 1974; Welch, 1974). While one may not agree with this interpretation, the important point is that economists do have rather elegant theories which can be utilized by sociologists.

Second, these theories or perspectives will prove useful in suggesting areas of post-schooling market experiences that need to be incorporated into sociological status attainment models. With very few exceptions (e.g.; Griliches and Mason, 1973; Beck and Madans, 1974), status attainment researchers have concentrated their attention on academic educational attainment and certification to the exclusion of other skill-producing activities. Formal schooling, however, is only one possible avenue whereby men might increase their productive skills and, hence, their labor market value. Labor market experience, on-the-job training, vocational education, and military service are just a few of the many possible post-schooling experiences known to influence adult attainments (Mincer, 1962, 1974; Bowman, 1974; Stolzenberg, 1975; Flanagan, 1974; Griliches and Mason, 1973; Link and Ratledge, 1975; Cutright, 1974 ; Browning, Lopreato, and Poston, 1973; Parnes, et al., 1970). For example, the men in the sample to be analyzed identify quite diverse sources of vocational preparation. In response to the question, "Where did you get your training for your job?", the following sources were identified: high school (18%), college (32%), technical or vocational school (12%), apprenticeship (15%), military service (12%), on-the-job training (76%), and company training program (23%). The majority of men in our sample, then, report that they received their training not in academic settings (high school and college), but rather through a variety of post-schooling and labor market mechanisms.

Because labor economics focuses attention on the more proximate, accumulated labor-market skills and attitudes (as indexed, perhaps, by experience, job tenure, and on-the-job training), researchers using this approach are more successful in explaining variation in labor market success (especially earnings) than are status attainment researchers. Mincer (1974) explained over 30 percent of the variance in annual earnings with just two human capital variables (and transformations of these variables), schooling and work experience. Psacharopoulos (1974), in his survey of the results of many economic studies of income distribution, reports even higher R^2's. This compares to a multiple coefficient of determination of 0.05 - 0.20 obtained by status attainment researchers using a multitude of background and "school process" variables, but excluding labor market experience (see Sewell and Hauser, 1972, 1975; Duncan, Featherman, and Duncan, 1972; Otto and Featherman, 1975; Alexander, Eckland and Griffin, 1975; Griffin, 1976a; Jencks, 1972; Spaeth, 1976a). Moreover, human capital researchers have documented the importance of nonlinear and interactive schooling and work experience influences on earnings (Mincer, 1974; Heckman and Polachek, 1974; Stolzenberg, 1975; Rosenzweig and Morgan, 1976; Blinder, 1973, 1976; Rosenzweig, 1976). In short, an important contribution of labor economics to the present project may be the identification of crucial earnings-related post-schooling and labor market activities and its attention to the utility of alternative functional forms of schooling and experience variables.

Finally, labor economics -- especially human capital theory -- may supply students of social stratification and inequality with the conceptual apparatus necessary to study "subjective" achievement or non-monetary work rewards as an outcome of market processes. The human capital approach is general enough to regard these "psychic incomes" as returns to schooling and post-schooling investments (Beaton, 1975; G. Duncan, 1974; Gordon, 1972a; Lucas, 1974). Mincer (1970), for example, has called for human capital analyses of employment stability -- a non-monetary reward of work.

1.3.2(b) Limitations

As useful as labor market theories are for our understanding of the dynamics of the socioeconomic career, most empirical applications of these theories suffer from a rather serious and far-reaching limitation: they do not specify those forces or mechanisms affecting the quality or quantity of skill acquisition. Human capital economists are principally interested in estimating the socioeconomic (and, increasingly, psychological) "payoffs" to investments in schooling and labor market experience rather than in taking as problematic the production of marketable skills. While the disparity in the amount and efficacy of productive skills is of paramount importance in empirical investigation of earnings differentials, those very skill inequalities are themselves generally regarded as given. It is as though adults, upon entering the labor force and securing employment, are thereby stripped of their childhood and adolescent histories. In somewhat more technical terms, schooling and experience are usually treated as exogenous variables in human capital models of labor market success (Mincer, 1958, 1974; Flanagan, 1974; Polachek, 1975; Malkiel and Malkiel, 1974; Stolzenberg, 1975; Ashenfelter and Mooney, 1968; Weiss, 1970; Hanoch, 1967; Welch, 1973a; for exceptions to this generalization, see Blinder, 1973; Wachtel, 1975b). While this practice often conforms to the data constraints imposed upon human capital economists,[4] it nevertheless has some very undesirable consequences, three of which will be briefly discussed below.

(1). It is likely that different types of vocational training differentially affect particular labor market rewards. Educational attainment, for example, may be quite effective in placing men in the occupational status hierarchy (Blau and Duncan, 1967; Sewell and Hauser, 1972, 1975;

Alexander, Eckland, and Griffin, 1975), but less efficacious in determining earnings (Duncan, Featherman, and Duncan, 1972; Spaeth, 1976a; Sewell and Hauser, 1972, 1975; Alexander, Eckland, and Griffin, 1975; Jencks, 1972) or job satisfaction (Kalleberg, 1974; Beaton, 1975; Jencks, 1972). The last two career outcomes may be relatively more sensitive to work experience or specific on-the-job training. A social policy directed toward equalizing or enhancing, say, earnings must be appreciative not only of the differential utility of various labor market skills, but also of the mechanisms which generate different types of human capital. Human capital research, as conventionally conducted, typically neglects these skill-producing processes.

(2). Interest in the underlying economic, social, and psychological determinants of socioeconomic achievement dictates consideration of the mechanisms of the acquisition of skills. The determinants of productive skills -- familial, childhood, and adolescent schooling experiences -- influence labor market success at least indirectly; that is, by stimulating or retarding the development of human capital. Mincer (1974), perhaps the foremost human capital economist, has recently commented upon the need for a more complete representation of the process governing the distribution of earnings (p. 143-144):

> ...a further analysis of the distribution of earnings would require... a system of equations that includes not only the investment-earnings relation but a formulation in which investment is the dependent variable, and another in which (time spent in) employment is the dependent variable.

While some theoretical work is now being conducted on these issues within the human capital tradition (e.g.; Ishikawa, 1975), its immediate empirical application appears remote. Some economists (e.g.; Bowles and Gintis, 1976; Bowles and Nelson, 1974; Bowles, 1972, 1973; Gintis, 1971) have recognized this limitation and have used Marxian perspectives to model socioeconomic achievement processes. The data used by these economists, however, unfortunately remain restrictive.

(3). Some evidence exists which suggests that individuals from higher socioeconomic status (SES) backgrounds and/or those who are of higher ability tend not only to acquire more schooling (and other skills) but also more earnings and other socioeconomic achievements (Taubman and Wales, 1972, 1973; Sewell and Hauser, 1972, 1975; Alexander, Eckland, and Griffin, 1975; Griffin, 1976a). To the extent that SES origins and ability, or any other determinant of human capital, directly (i.e.; net of skills) affect earnings, and those variables are not included in earnings functions, the returns to skills (or human capital) will be artifactually inflated.[5] Sewell and Hauser (1975), Griffin (1976a), and Taubman and Wales (1973) report that the returns to educational attainment are reduced by almost 40 percent simply by controlling for adequately specified SES and ability variables.[6] In order to locate the sources of bias, and to control for their effects, the most salient determinants of productive skills must first be identified. Once more, researchers must move beyond labor market theories in order to accomplish this task.

1.4 A Synthesis of the Socioeconomic Life-Cycle and Labor Economics Perspectives of Labor Market Achievement

In the above section, I argued that both labor economics and socioeconomic life-cycle modeling, despite their considerable value for the analysis of labor market achievement, suffer from serious deficiencies. Briefly, the perspectives used by labor economists are extremely useful in identifying market experiences which retard or stimulate adult achievement and inequality. As conventionally applied, however, human capital theory, the most articulated labor market theory, is of little utility in elucidating the processes producing valued and potentially marketable skills and activities. On the other hand, the life-cycle framework has enhanced our understanding of the familial and schooling experiences conducive to educational attainment but has not achieved comparable success in explaining labor market outcomes. The two approaches, hence, appear complementary: the advantages of one are the limitations of the other. This suggests the value of merging the two research approaches. My objective in this research, therefore, is to investigate the acquisition of a variety of types of potentially valuable skills and the subsequent socioeconomic and psychological "payoffs" to these productive skills and experiences[7] within the context of a socioeconomic life-cycle framework. This conceptual-analytic approach would permit evaluation of the role of adult market experiences in transmitting social and economic inequality from generation to generation or, conversely, in "freeing" men from the effects of their ascribed statuses and independently explaining and stimulating labor market success.

FOOTNOTES

1. Based upon the conceptual-analytic strategy implied by socioeconomic life-cycle modeling, as well as some specific modeling results, Spaeth (1976b) has developed a "general theory" of achievement.

2. Piore (1973), in his discussion of a "sociological" theory of wages, suggests several other determinants of earnings which are clearly outside the scope of human capital theory. These include custom and tradition of the firm concerning hiring, promotion, and paying practices, the internal structure of the firm's reward structure, and collegial networks and influences.

3. Some human capital researchers (e.g.; Welch, 1974; Wachtel, 1975b; Ishikawa, 1975; Mincer, 1974; Hill and Stafford, 1974) argue that direct social background effects on earnings can be "explained" by positing that higher SES families "invest" more time and resources into the child's home-related and pre-schooling activities. It is argued, therefore, that human capital theory is not invalidated by such results. I present some evidence relevant to this speculation in Chapter 5.

4. Much of the research to date in the human capital

tradition has been based on the Census Bureau's 1960 and 1970 Public Use Samples and the 1966 and 1967 Survey of Economic Opportunity (see, for example, Hanoch, 1967; Harrison, 1972; Haworth, Gwartney, and Haworth, 1975; Mincer, 1974; Weiss, 1970; Welch, 1973a). Although this body of work has generated important and impressive results, these particular data banks contain little or no information about individuals' social origins, academic ability, social psychological motivations and supports, "school career" experiences, quality of schooling, variety and quality of many post-school experiences, or dimensions of labor market success other than earnings. Hence inquiry into such critically important issues as the determinants of human capital investment behavior, the importance of quality of schooling and post-schooling investments, and the differential sensitivity of various labor market rewards to prior statuses, experiences, and investments has in the past been severely restricted.

5. This can be easily shown. If the "true" model is:

(1) $\text{ABILITY} = B_1\ \text{SES} + e_1$

(2) $\text{EDUCATION} = B_2\text{SES} + B_3\text{ABILITY} + e_2$

(3) $\text{EARNINGS} = B_4\text{SES} + B_5\text{ABILITY} + B_6\text{EDUCATION} + e_3$

but we estimate:

(4) $\text{EARNINGS} = B_6\text{EDUCATION} + U_1$

the OLS estimate of B_6 (say, b_6) will be:

(5) $b_6 = B_6 + B_2B_4 + B_3B_5 + B_1B_2B_5 + B_1B_3B_4$.

The bias is entirely a function of the degree to which ability and SES directly affect earnings.

6. Griffin (1976a) reanalyzed data from seven sources and concluded that the bias in occupational status returns to schooling is negligible, while the bias in earnings returns to schooling is appreciable. The direct SES effect on earnings was hypothesized by Bowles (1972) and Bowles and Nelson (1974) but the absence of data on respondent's parental income precluded a real test. For a contrary view, see Becker (1972). Most of the bias attributable to socioeconomic origins reported in Sewell and Hauser (1975), Alexander, Eckland, and Griffin (1975) and Griffin (1976a) was due to indices of parental income or parental wealth. The estimated bias is much smaller controlling only for father's occupation and father's education, the most frequent measures of socioeconomic origins.

It is important to note that the bias due to social origins and ability is almost additive. This suggests that researchers attempting to estimate socioeconomic returns to schooling cannot control for either origins only or ability only and expect to account for the bias due to both (Griffin, 1976a). The covariance of socioeconomic origins and ability is too modest (see Duncan, 1968) to use one as a proxy for the other.

7. Mincer (1974: 143) has commented on the crudity of most measures of post-schooling investments. For example, work experience is usually only estimated as age or age minus education minus 5 (see Mincer, 1974; Blinder, 1973, 1976; Rosenzweig and Morgan, 1976; Rosenzweig, 1976). Estimated experience, in turn, is often used as a proxy for an unobservable process, investment in on-the-job training (see Mincer, 1962). All of these measurement difficulties make problematic estimates of the skill producing potential of various investments in post-schooling activities and attenuate the investment-earnings relationship. This can be demonstrated more formally as follows:

If the "true" model is:

$$(1)\ \text{EARNINGS} = B_1\text{SKILLS} + e_1$$

$$(2)\ \text{EXPERIENCE} = \text{SKILLS} + \text{ERROR}$$

but we estimate:

$$(3)\ \text{EARNINGS} = B_1\text{EXPERIENCE} + U_1$$

our estimate of B_1 (say, b_1) will be:

$$(4)\ b_1 = B_1 \left(\frac{\sigma^2\text{SKILLS}}{(\sigma^2\text{SKILLS} + \sigma^2\text{ERROR})}\right)$$

Thus b_1 is a biased estimate of B_1 to the extent that SKILLS is imperfectly measured by EXPERIENCE. The degree of bias depends on the variance of the error term in (2) above. For general statements on the errors-in-variables problem, see Siegel and Hodge, 1968; Bohrnstedt and Carter, 1971; Stanley, 1971. Direct information on labor force experience and on-the-job training, as well as other forms of market experiences (i.e.; labor supply) will hopefully allow me to avoid some of these difficulties in the proposed project.

Chapter 2

DATA SOURCE AND VARIABLE MEASUREMENT

2.1 Data Source

I have already discussed some of the findings of our work with these data. The "Explorations of Equality of Opportunity" survey traces longitudinally the careers of a national sample of 2,077 white students who were surveyed by the Educational Testing Service as sophomores in 42 high schools in 1955 and who were followed-up by the Institute for Research in the Social Sciences, The University of North Carolina, under the direction of Bruce Eckland in 1970. My analysis will be limited to the male subsample (N=947).

The nationally representative sample originally chosen by ETS had included all seniors in 516 schools and all sophomores in 97 of these. In 1955 these students were administered a twenty item aptitude test, measuring both verbal and mathematical ability, and a questionnaire eliciting self-reported information on such items as family background status, occupational and educational goals, and peer, parental, and teacher influences on college plans.

The 1970 EEO follow-up survey was restricted primarily to the national sophomore sample. Schools constituted the basic sampling units. These were stratified by region and size, and to some extent by parental education, group test scores, and school dropout and college-going rates. The targeted sample consisted of 42 schools with 4,151 sophomores from all regions. Usable follow-up data on a three-hour, self-administered questionnaire were obtained for 2,077 of these, with 1,130 females and 947 males responding. The fifty percent non-response consists of 32 percent refusals, 16 percent lost cases, and 2 percent deceased. The major sample selection biases involve an underrepresentation of urban and large schools (partially an intended consequence of sample stratification), and, not surprisingly, an underrepresentation of low aptitude students. Alexander and Eckland (1973: 69) note, however, that this does not constrain interpretation of the effects of most background and schooling variables. What evidence we have, moreover, suggests that the crucial variables in our analysis operate almost exactly "as expected" in all of our research thus far (Alexander and Eckland, 1974, 1975a, 1975b, 1975c, 1975d; Alexander, Eckland, and Griffin, 1975; Griffin, 1976a, 1976b). More detailed descriptions of the EEO schools (Eckland and MacGillivary, 1972) and sampling procedures (Alexander and Eckland, 1973) are available elsewhere.

An extraordinarily diverse and rich selection of information is available in the 1970 survey. Detailed information was obtained on the respondents' educational, occupational, and marital "careers", and also on a wide range of attitudes (including attitudes toward high school, college, military service, and work).

Yearly data, from 1955 to 1970, were obtained retrospectively on the respondents' marital status, school enrollment, geographical mobility, and labor force participation. Extensive information was also obtained on details of the respondents' most recent labor market experiences. Longitudinal data of this sort are absolutely essential for disentangling the complex patterns of influence among variables implicated in the determination of labor market behavior.

It must be noted that the data are subject to limitations in addition to those discussed above. Since the men are relatively young (around 30 years of age), and still in the early stages of their socioeconomic careers, the relationships among some variables are different from those observed for older men in the prime of their careers. This is especially true for the education-earnings correlation, which is substantially lower in the EEO data than in other data sets (see Mincer, 1974 and Duncan, Featherman, and Duncan, 1972 for correlations between earnings and education for older cohorts of males). Moreover, since much of the labor force experience information has not been analyzed before, the reliability and validity of these data are unknown. Preliminary analyses with some of these data have, however, obtained relationships comparable to those documented in the economics literature. In the subsequent chapters, I will attempt to point out major comparabilities or discrepancies between the results presented here and those obtained elsewhere.

2.2 Variable Measurement

The 1970 follow-up questionnaire provides a wealth of information on a wide range of substantive content. The schedule itself is a 35 page document and includes 159 separately numbered items, most of which themselves contain multiple items. The 1955 ETS questionnaire contained 59 items in an 8 page booklet. Most of the variable measures used in this dissertation were derived from the contents of these two schedules.

(1) Socioeconomic Status Origins

The five indicators of status origins to be employed in this analysis are as follows:

(a) Mother's Education and (b) Father's Education : Parental educational attainment items were included in the 1970 schedule. Nine response categories were provided for each item. Following Sewell and Hauser (1975), responses were rescaled to years of schooling completed. The categories, with their corresponding scaled values, are: none, or some grade school -- 4 years; finished grade school -- 8 years; some high school -- 10 years; high school graduate -- 12 years; some college -- 14 years; Bachelor's degree -- 16 years; some graduate work -- 17 years; Master's degree -- 18 years; Ph.D. or professional degree -- 20 years.

Somewhat over 3 percent of the 947 males in the sample failed to respond to the mother's education item or provided "do not know," or "does not apply" responses. These cases were assigned the total sample mean value on the mother's education item. A comparable proportion of males responded similarly for the father's education item. These values for these cases were estimated from responses to a comparable item from the 1955 schedule; the two responses correlate at .82 for males.

(c) Father's Occupation :

The item tapping this variable was included in the 1970 schedule. It pertained to father's occupation "while you were in high school" and was assigned Duncan's (1961) socioeconomic index scores.

(d) Household Items Index :

A factor weighted summated index of household possessions in the respondent's high school family household was constructed according to Maxwell's weighting scheme (Maxwell, 1971). The 13 items of the scale, which were included in the 1970 schedule,are: a telephone; more than one phone; a set of encyclopedias; more than 50 books; more than 200 books; more than one car; a typewriter; a bath tub; more than ten phonograph records; more than one bathroom; a newspaper delivered daily; a magazine subscription; and a map or globe of the world. The scale has a reliability coefficient (internal consistency) of .83.

(e) Parental Income:

This item, which pertains to "your family's total household income (from all sources and before taxes) when you were in high school," was measured in 1970. Responses were originally coded in 24 income categories, ranging from "under $2000" to "$36,000 and over," and were subsequently rescaled into dollars by assigning midpoints

TABLE 2.1

Correlations between Parental Income and Father's Education, Mother's Education, and Father's Occupation

	EEO* (N=563)	WISCONSIN* (N=1789)
Father's Education	.405	.321
Mother's Education	.255	.247
Father's Occupation	.393	.448

*Non-farm origin

"father and stepmother," etc.) was coded 0.

(c) Working Mother:

If the respondent's mother worked for wages or salary when he was in high school, he received a value of 1. Son's with non-working mothers received a score of 0. This information was obtained from the 1970 questionnaire.

(d) Religious Background:

The item tapping this variable pertains to the religion in which the respondent was reared and was included in the 1970 instrument. After experimentation, three dummy variables, representing Catholic background, Jewish background, and Presbyterian-Episcopalian background were created. "No religion," "other religion," and other Protestant (i.e.; "Baptist," "Lutheran," "Methodist," and "other Protestant") constituted the suppressed category though the actual number of "no religion" and "other religion" responses was extremely small.

(e) School Location in 1955:

The state in which each school was located at the time of the sophomore survey in 1955 was available as a natural result of the sampling design. Four dummy variables were then created, corresponding to the Census designations as North Central, Northeast, West, and South. As a result of preliminary regression analyses, West versus non-West was retained as the school location variable.

(f) Metropolitan Background:

In 1970, the respondents were asked "where you lived when you were in high school 15 years ago?" It was decided, after preliminary data analysis, to create a dummy variable representing metropolitan background. Accordingly, if the respondent reported living in a suburb or a central city with a population of 50,000 or more, he was classified as having a metropolitan background.

(3) Academic Aptitude

Aptitude was measured as scores on a twenty item academic aptitude test administered in the 1955 survey. The test taps both vocabulary and arithmetic reasoning. In the construction of the test, which was designed for maximum discrimination between the sixth and eighth deciles of an unselected twelfth grade population, equal weight was given to each of its components, vocabulary and arithmetic reasoning. The test's reliability was estimated at .82. See Stice and Ekstrom (1964) for greater detail on this test.

(4) Peer College Plans

This index of peer college orientations was constructed by summing responses to two pertinent items from the 1955 schedule, the first, "What are the college plans of the friend you most like?" and the second, "Of the people your own age with whom you spend most of your free time, how many of them plan to go to college, or are already going to college?"

(5) Parental and (6) Teacher Influences:

Two indicators of the influence of adult "significant others" were obtained from the 1955 schedule. The first item pertains to parents and asks, "To what extent have you discussed going to college with your parents or guardians?" The second item is directed toward school personnel and asks, "To what extent have you discussed going to college with the teachers or guidance counselors (advisors) in your school?" The response categories for both items were "not at all"; "some"; "quite a lot." As Alexander and Eckland (1973: 82) note, "Although we have no evidence to support this point, it is assumed that the net effect of such discussions is generally toward the encouragement of college plans."

Other work with these three variables suggests the utility of not combining peer, parental, and teacher supports into a global variable, "significant others' influence" (Alexander and Eckland, 1974; Alexander, Eckland, and Griffin, 1975). The indicators tap diverse kinds of influences (i.e.; peer modeling versus parental and teacher/counselor press), they are differently sensitive to antecedent variables, and they evidence quite dissimilar influences upon a variety of outcomes (see, also, discussion in Hauser, 1973).

It should be noted, finally, that these variables measure the perceptions of the student, which are not necessarily entirely accurate. While it is not entirely clear whether "realities" or "perceptions" are more appropriate to measure "significant others' influence" (Sewell, Haller, and Portes, 1969), different conclusions result from the use of different indicators (Kerckhoff and Huff, 1974; Hauser, 1972). In particular, it is likely that our self-reported proxies may overstate the influence of the "true" conceptual variables.

(7) Educational Expectations

Educational expectations were measured with an item from the 1955 schedule. The item was worded as follows: "What do you think you will do when you finish high school?

(Suppose you do not go into the military service.)" The response categories available were: (1) go to college; (2) work for a year or two and then go to college; (3) get a part-time job and go to college; (4) get a full-time job and go to college at night; (5) go to trade school, or take special training; (6) get a job; (7) become an apprentice; and (8) other. The variable used in this analysis is a trichotomy, distinguishing between college-going (category 1), possible college (2 through 4), and non-college going (5 through 8) groups.

(8) Occupational Aspiration

Occupational aspirations were ascertained in 1955 with an open-ended question. The responses were then coded into 90 titles and subsequently assigned Duncan's SEI scores. While this procedure was less than ideal, employing the same recoding scheme for respondents' occupational attainments produced a .95 correlation between the rescaled occupational titles and originally coded SEI scores.

(9) Class Rank

Senior class rank is based on a quintile ranking obtained from the school principals in 1959 (Stice and Ekstrom, 1964).

(10) Curricula Tracking

Senior year curricula enrollments were obtained from the 1970 schedule. Two dummy variables were created from this item, "college curriculum" and "vocational curriculum." The suppressed category, therefore, is "general" program or curriculum.

(11) High School Coursework

The 1970 instrument contained two separate questions on the number of semesters of mathematics and of science courses the respondent took in high school. The questions limited mathematics courses to algebra, geometry, trigonometry, and calculus. Similarly, science courses were constrained to include coursework only in biology, chemistry, and physics. It was decided, based upon preliminary regression analyses, to sum the items into a single index of coursework.

(12) Academic Self-Concept

A factor weighted academic self-concept scale was constructed with Maxwell's weighting scheme in a fashion similar to the construction of the previously discussed index of household items. Nine items, all from the 1970 schedule, pertained to self-perceptions of academic performance, strengths, and weaknesses. The composite index has a reliability coefficient of .90. Estimates of missing data were obtained by assigning the individual's average weighted item value to missing items for those respondents who replied to at least five of the nine items.

(13) Educational Attainment

Educational attainment, as of 1970, was measured with the same set of categories employed in the father's education item and was similarly rescaled into years of schooling completed. If the respondent completed less than 16 years of schooling, he was given a maximum of one year's credit for attendance at a technical, business, or trade school.

(14) Labor Force Experience

For reasons which will be discussed in Chapter 5, and more fully elaborated in Griffin (1976b), I employ three measures of length of work experience. With the exception of the firm experience measure, employment data are taken from self-reported, retrospective career histories, gathered in 1970 and dating back to before 1955. These employment data, while superior to that which must be estimated from other variables (e.g.; EXPERIENCE = AGE - SCHOOLING - 5), are of course not without inaccuracies, chiefly errors of recall. Although I have no direct validity or reliability information on these data, similar retrospective life-history data have been successfully validated (Blum, 1970). A serious shortcoming of these particular data is that they do not distinguish between full-time and part-time schooling and employment. The measures are as follows:

(a) Experience Acquired before Termination of Academic Schooling:

This measure of experience is the sum of the number of years in which the respondent was gainfully employed in the labor market before he terminated his academic schooling. Such experience represents concurrent labor force participation and enrollment in an academic school program and alternating periods of schooling and work.

(b) Experience Acquired after Termination of Academic Schooling and Before Entry into Current Job:

This component of experience is the total number of years the respondent was gainfully employed after he terminated his academic schooling but before he entered his current job. The life-history data make no distinction between previous jobs held and current job. Therefore, it was necessary to subtract post-schooling, current job experience (see (c) below), ascertained in the 1970 instrument, from total post-schooling experience.

(c) Post-Schooling, Current Job Experience:

The 1970 questionnaire included the following question: "How long have (had) you been working on your present job?" Responses to this item are the basis for this measure. However, since it was important to differentiate between post-schooling experience and experience during the schooling process, the life-history data were then used to calculate the number of years an individual was employed on his current job before termination of schooling. Such experience was then subtracted from total current job experience to yield a measure of post-schooling experience on current job.

In view of the centrality of these experience measures to this study, I present in Figure 2.1 patterns of employment and schooling activities for two hypothetical individuals to demonstrate the rather complex construction of the three experience variables.

The first individual was in the labor market a total of seven years. For two of those years (1962, 1963), however, he was both in school and employed. Moreover, he was employed for an additional two years (1964, 1965) before he terminated his academic schooling in 1966, i.e.;

FIGURE 2.1

Schooling and Employment Patterns of Two Hypothetical Men

Person 1	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
IN SCHOOL	YES	YES	YES	NO	NO	YES	NO	NO	NO	NO
IN LABOR MARKET	NO	YES	YES	YES	YES	NO	NO	YES	YES*	YES*
Person 2										
IN SCHOOL	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO
IN LABOR MARKET	YES	YES	YES*	YES*	YES*	YES*	YES*	YES*	YES*	YES*

*Current job

the last year during which he was enrolled in school. Hence, for the first component of work experience described above, i.e.; experience acquired during schooling, he receives a value of 4. After the termination of schooling, he was employed for three years, two of which (1969, 1970) represent experience on his current job. Therefore, for post-schooling, current job experience he receives a value of 2, and for post-schooling, previous job experience, he receives a value of 1 (see Table 2.2), this for the year 1968 (3-2=1).

Our second hypothetical worker was employed for a total of ten years. During three of these years (1961-1963), he was also enrolled in an academic schooling program. Thus, he receives a score of 3 for experience acquired during schooling. His total current job experience is eight years (1963-1970), but during one of these years (1963), he was in school. One year, then, is subtracted from his total current job experience to yield 7 years of post-schooling, current job experience. Finally, since all of his post-schooling experience was spent with the same employer, he has no post-schooling, previous job experience (see Table 2.2).

TABLE 2.2

Number of Years of Work Experience for Two Hypothetical Men

	Person 1	Person 2
Experience Gained During Schooling	4	3
Post-Schooling, Non Current Job Experience	1	0
Post-Schooling, Current Job Experience	2	7

(15) On-the-Job Training

The 1970 instrument elicited self-reports of "where you got your training for your job." The nine response categories were: high school, college, technical or vocational school, apprenticeship, military service, correspondence school, on-the-job training, special company training program, and other. The categories were not mutually exclusive and the respondent was instructed to "circle as many as apply." Categories which few respondents checked were a priori excluded from analysis and the "high school" and "college" categories were found to be highly collinear with actual educational attainment. Preliminary regression analyses were then conducted with five dummy variables representing training via vocational school, apprenticeship, military service, on-the-job, and company program. "Military service"[1] and "vocational school" did not affect either earnings or work satisfaction and were deleted from subsequent analyses. The remaining variables, on-the-job training, apprenticeship, and company training program, were summed (e.g.; Flanagan, 1974) to form a composite index.

(16) Labor Supply

Two open-ended items included in the 1970 schedule were used to assess the number of hours worked annually in 1969, or labor supply. These were: (1) "Last year ... how many weeks were you out of work or on layoff? Do not include regular vacation time, military obligations, or going to school." Responses on this item were then subtracted from 52 to yield the number of weeks worked during the year; and (2) "On the average, how many hours do (did) you work each week?" The two variables were then multiplied, and their product is the number of hours supplied to the market during 1969.[2]

Three measures of occupational achievement are employed in this analysis. The raw data for all three were obtained from the same open-ended question which asked: "What kind of work do you do now...?" This question was included in the 1970 instrument.

(17) Occupational Status

Responses to the question described above were indexed by Duncan's SEI scale.

(18) Work Characteristics

The two measures of work characteristics included in this analysis are (a) complexity of work and (b) training and skills requisites of jobs. In order to understand the meaning of these characteristics and their construction, I must first provide some background information.

For every unique job-title in the Dictionary of Occupational Titles (DOT), some 14000, estimates were derived of the job's typical level of functioning with people, data, and things and of the traits needed by workers to achieve average successful job performance (see Table 2.3). The details of the rating procedure are contained in the Handbook for Analyzing Jobs (U.S. Department of Labor, 1972).

Data on worker traits are published in the DOT for the following six dimensions: training time, aptitudes, interests, temperaments, physical demands, and working conditions. For reasons which I will discuss in more detail below, this analysis deals with only training time, which is defined by the DOT (U.S. Department of Labor, 1972) as the amount of general educational development and specific vocational preparation required for a worker to acquire the knowledge and abilities necessary for average performance in a particular job. The following description of these attributes is from the Dictionary of Occupational Titles (U.S. Department of Labor, 1972).

TABLE 2.3

Complexity of Work with Data, People, and Things

	DATA		PEOPLE		THINGS
0	Synthesizing	0	Mentoring	0	Setting-up
1	Coordinating	1	Negotiating	1	Precision Working
2	Analyzing	2	Instructing	2	Operating
3	Compiling	3	Supervising	3	Driving-Operating
4	Computing	4	Diverting	4	Manipulating
5	Copying	5	Persuading	5	Tending
6	Comparing	6	Speaking-Signalling	6	Feeding-Offbearing
7	No significant relationship	7	Serving	7	Handling
		8	No significant relationship	8	No significant relationship

General Educational Development:

This embraces those aspects of education (formal and informal) which contribute to the worker's (a) reasoning development and ability to follow instructions, and (b) acquisition of tool knowledges, such as language and mathematical skills. It is education of a general nature which does not have a recognized, fairly specific, occupational objective. Ordinarily such education is obtained in elementary school, high school, or college. It also derives from experience and individual study.

Specific Vocational Preparation:

The amount of time required to learn the techniques, acquire information, and develop the facility needed for average performance in a specific job-worker situation. This training may be acquired in a school, work, military, institutional, or avocational environment. It does not include orientation training required of even every fully qualified worker to become accustomed to the special conditions of any new job. Specific vocational training includes training given in any of the following circumstances:

a. Vocational education (such as high school commercial or shop training, technical school, art school, and that part of college training which is organized around a specific vocational objective);

b. Apprentice training (for apprenticeable jobs only);

c. In-plant training (given by an employer in the form of organized classroom study);

d. On-the-job training (serving as learner or trainee on the job under the instruction of a qualified worker);

e. Essential experience in other jobs (serving in less responsible jobs which lead to the higher grade job or serving in other jobs which qualify).

As I noted above, these data are available for some 14000 job titles, much too detailed for practical use. Temme (1975), however, estimated for each of the 584 occupational categories from the 1970 Census classification that occupation's training time requirements and data, people, and things estimates. Temme (1975) employed the following procedures: (1) assume the scales to be interval; (2) estimate the number of people in the labor force who work at each DOT-defined job; and (3) compute an average for all persons coded into the same Census category on each of five DOT variables, weighted by the number of persons with each detailed job category. Approximately 75 percent of the total variation in each of these scores for 14000 job titles was "captured" by 584 Census categories (Temme, 1975). Temme's scores, then, constitute the basic data for the two work characteristic measures.

(a) Complexity of Work:

Substantive complexity of work is a linear combination of the occupational averages (from Temme) for data, people, and things. The following formula was applied to the EEO data:

Complexity of Work = .133DATA + .119PEOPLE - .711THINGS,

with the last variable scored as a zero-one dummy. The regression formula is based on the research of Kohn (1969), who reports that complexity of work, as ascertained in detailed interviews with individual respondents, could be approximated with the above equation and using occupational averages. The "things" variable is collapsed since Kohn (1969) found that it was simply working with things, not the level at which one works with things, that is most relevant for the determination of work complexity. Kohn reports that the multiple correlation between the approximated complexity of work and his interview-based measure was 0.78. I explored alternative weighting schemes (e.g.; equal weighting), but found no improvement in the variable's "operation."

(b) Training and Skills Requisites of Jobs:

This variable is an equally weighted sum of GED and SVP, again using the occupational averages derived by Temme (1975).

It was my original intention to employ other occupational attributes, especially working conditions and physical demands, in this analysis. Temme (1975), however, had not performed similar estimation procedures for any of the other attributes. Steven McLaughlin, Washington State University, has calculated these values for about 300 occupations included in the 1970 Census. He kindly furnished me with his data, but the missing data proved too extensive to allow their use.

(19) Annual Earnings

Earnings (as of 1969) were assessed by the following question: "What was your personal income last year from work (including all jobs you held at any time)?" Response alternatives, and subsequent rescaling, were identical to those in the parental income item. Two points concerning these earnings data are pertinent. First, although the EEO question refers to "income," it specifies income earned from work; therefore, it clearly measures earnings rather than income. Second, the data include the earnings of multi-job and part-time workers. Preliminary analyses with men working full-time on only one job,suggest, however, that there are no substantial differences for these men and the considerably larger total sample of EEO men.

(20) Subjective Work Outcomes

Several different indicators of subjective work outcomes are used in this analysis: (a) work satisfaction; (b) pride in work; and (c) perceived attributes of jobs.

(a) Satisfaction with type of work, salary, firm, and the job as a whole are assessed by directly asking the respondent to indicate his satisfaction on a five-point Likert scale, with response alternatives ranging from "extremely satisfied" to "extremely dissatisfied."

It should be emphasized at this point that my conceptualizations of satisfaction generally are psychological in orientation and are measured by the respondent's direct response to the questions. Although this conceptualization and operationalization appears most often in the literature, alternatives, such as indicators of overt behaviors or discrepancy scores, are not uncommon (e.g.; Robinson, et al., 1969). I conceive of work satisfaction as a psychological attribute of the individual, not a behavioral or performance attribute. The empirical association of satisfaction and work-related behavior does not obviate their conceptual distinctiveness. And with respect to discrepancy or deficiency scores, which are measured by the difference between "how much is there now" and "how much should be there" for a particular facet of work, I suggest that individual respondents mentally perform this calculation when answering direct questions about their satisfaction. Moreover, conceptualizing satisfaction in terms of "need deficiency" automatically precludes assessing the degree to which the two components of need deficiency (actual and ideal job conditions) influence satisfaction.

The direct measure of overall satisfaction, used by Hodge (1970), has been criticized for overestimating the amount of satisfaction actually present in any particular population because a positive response to this item may be tantamount to a societal norm (Kornhauser, 1946; Wilensky, 1964; Blauner, 1966). As Morse and Weiss (1955: 198) observe, "There appears to be a tendency for the individual to react positively to his work situation and to emphasize favorable aspects of it." This may partially explain the relative insensitivity of this indicator to socioeconomic achievement (see discussion in Chapter 7). Furthermore, the recent research by Kalleberg (1974) implies that the direct measure may function as an indicator of educational and occupational status attainment. That is, for measurement and not substantive reasons, the direct measure of satisfaction is directly affected by these two dimensions of career achievement. Thus, to the extent that these relationships represent measurement artifacts, the direct measure is invalid. Although these criticisms have not been applied to direct measures of satisfaction with different facets of work, they probably are valid, albeit to an unknown degree.

Recognizing that the above indicators may be weak measures of my unobservable satisfaction construct, and desirous of presenting results which are not methodologically bound, I used an additional, perhaps more subtle, indicator of overall work satisfaction. It is widely known as the "other work" indicator and is measured by this question: "Are you looking for another job?" Four response alternatives are possible, ranging from "Yes, I am actively looking right now (most dissatisfied), to "No, and I would not consider changing jobs at this time" (most satisfied).

(b) I employ one additional indicator of positive orientation toward one's job: "I take pride in my work." Responses are scored from 1 (strongly disagree) to 5 (strongly agree).

(c) It is arguable, however, that any measure of work satisfaction or positive attitude toward work may have the same or similar shortcomings discussed above in conjunction with the overall measure. Therefore, I also use these seven perceived job characteristics:

(1) "My work situation is COMPETITIVE"; (2) "My work is CREATIVE"; (3) "My work is IMPORTANT"; (4) "Most of the time, my work is INTERESTING"; (5) "My work is CHALLENGING"; (6) "It (my work) gives me the opportunity to be HELPFUL to others"; and (7) "My job allows me to be USEFUL to society." Response alternatives range from "strongly agree" (4) to "strongly disagree" (1).

All of these items are employed in some of the analyses presented in Chapter 7. Based on these analyses, as well as exploratory factor analyses, several of the items are deleted from further consideration. Items 2 through 5, above, are combined to form a "challenging work" scale and items 6 and 7 are combined into a "useful work" scale. The internal consistencies for the two composites are .81 and .74, respectively, Considering the short length of these composite measures, the internal consistency is quite good.

It should be noted, finally, that for purposes of constructing the scales, the items were assigned unit weights, rather than factor weights, because Alwin (1973) and others have demonstrated that the two procedures yield almost identical results.

2.3 Outline of the Study

The first chapter introduced the issues underlying the research problem and objectives. This chapter discussed the data to be used and the operationalizations and measurement of the variables. Chapter 3 will present the estimates of a "basic model" of the achievement process, which includes only social background, ability, and educational, occupational, and earnings attainments. The role of schooling variables in the stratification process is assessed in Chapter 4, while the causes and consequences of a variety of types of "human capital" are evaluated in Chapter 5. The determinants of and economic returns to complexity of work and skill requisites are analyzed in Chapter 6. The processes governing the psychological returns of work are investigated in Chapter 7. More extensive reviews of the relevant literature and the rationale underlying model specifications will be provided as specific substantive issues are addressed. The concluding chapter, Chapter 8, will review the findings, put them in a broader sociological and economic context, discuss the social policy implications of the research, where relevant, and offer suggestions for further research.

FOOTNOTES

1. A dummy variable for military service, which was elicited from an entirely different item, also failed to register any appreciable effect on earnings or satisfaction.

2. Jones and Husby (1976) criticize the estimation of hourly wage from weeks and hours worked for two possible inaccuracies. First, most studies rely on a Census-type item, "number of hours worked last week." Hours worked last week may not be typical of the average number of hours worked in a week. Second, both weeks worked and hours worked are usually coded into categories, rather than actual hours or weeks worked, and the categories are then assigned values representing their mid-points. This, too, may create error (see, however, Fuchs, 1967). The weeks and hours worked data employed in the present study do not suffer from these particular inaccuracies.

Chapter 3

SOCIAL BACKGROUND AND ACHIEVEMENT

3.1 Introduction

In this chapter I assess the importance of social background and academic ability for educational, occupational, and earnings attainments. I consider first the influence of socioeconomic status origins (or SES) and ability, and then SES, ability, and other non-status indicators of social background. I use multiple indicators of status origins because single-item indicators (a) underestimate the total influence of status origins (Haug and Sussman, 1971; Bowles, 1972; Hodge, 1970; Alexander and Eckland, 1973; Sewell and Hauser, 1975; Griffin, 1976a) and (b) overestimate the effect of any single indicator (Sewell and Hauser, 1975). The non-status measures of background have yet to be examined in previous work with these data. Past research has indicated their importance for socioeconomic achievement (B. Duncan, 1967; Featherman, 1971a , 1971b ; Hauser and Featherman, 1976; Duncan, Featherman, and Duncan, 1972) and I include them here to consider more thoroughly the diverse attributes of the family of origin which may condition adult attainments. Additionally, to the extent that these non-status background characteristics are correlated with traditional indicators of SES origins, their omission will tend to inflate the estimates of the importance of status or social class variables.

3.2 Socioeconomic Status Origins

Consider the following equations:

$$(3.1)\quad ABL=\beta_6 + \beta_1\ FAOCC + \beta_2\ FAED + \beta_3\ MOMED + \beta_4\ PARINC + \beta_s\ ACQUIS + \mu_1,$$

$$(3.2)\quad EDUC=\beta_6 + \beta_7\ FAOCC + \beta_8\ FAED + \beta_9\ MOMED + \beta_{10}\ PARINC + \beta_{11}\ ACQUIS + \beta_{12}\ ABL + \mu_2,$$

$$(3.3)\quad OCC= \beta_{13} + \beta_{14}\ FAOCC + \beta_{15}\ FAED + \beta_{16}\ MOMED + \beta_{17}\ PARINC + \beta_{18}\ ACQUIS + \beta_{19}\ ABL + \beta_{20}\ EDUC + \mu_3,$$

$$(3.4)\quad EARN= \beta_{21} + \beta_{22}\ FAOCC + \beta_{23} FAED + \beta_{24}\ MOMED + \beta_{25}\ PARINC + \beta_{26}\ ACQUIS + \beta_{27}\ ABL + \beta_{28}\ EDUC + \beta_{29}\ OCC + \mu_4,$$

where all variables were defined as in Chapter 2; these definitions, as well as the means and standard deviations of all variables used in this chapter, are repeated in Table 3.1. I assume temporarily that the disturbances are uncorrelated among themselves and with any of the regressors. I also assume all variables are perfectly measured and, moreover, that all structural influences are additive and linear.[1] These are unrealistically strong assumptions, some of which will be relaxed later in the study. Given these assumptions, however, the equations represent a just-determined recursive model estimable by OLS (Johnston, 1972; Duncan, 1975). In addition to estimating equations 3.1-3.4, I will also estimate the

TABLE 3.1

Variable Descriptions, Means, and Standard Deviations of All Variables Used in Chapter 3

Variable Symbol	Variable Description	N=656		N=521	
		$\bar{X}$	σ	$\bar{X}$	σ
FAOCC	Father's occupation	38.98	21.22	39.46	21.55
FAED	Father's education	9.95	3.58	10.81	3.01
MOMED	Mother's education	10.71	2.98	10.06	3.52
PARINC	Parental income	8345	5428	8464	5286
ACQUIS	Material possessions	.0006	.869	.0226	.874
ABL	Academic ability	7.60	3.96	7.86	4.03
EDUC	Educational attainment	14.44	2.61	14.60	2.64
OCC	Occupational status	51.61	23.92	52.73	23.76
EARN	Annual earnings	11098	4800	11055	4528
SIBS	Number of siblings	-----	----	2.42	1.73
INTACT	Family structure	-----	----	.868	.339
MOMWORK	Working mother	-----	----	.541	.499
PRES-EPISC	Presbyterian-Episcopalian	-----	----	.106	.308
CATHOL	Catholic	-----	----	.152	.359
JEWISH	Jewish	-----	----	.037	.188
WEST	Lived in west in 1955	-----	----	.163	.370
METRO	Lived in metropolitan area in 1955	-----	----	.253	.435

reduced form equations for all exogenous variables in the model. For any particular regressor (X_i) and outcome variable this is accomplished by regressing X_i (the explanatory variable under consideration) and those variables which precede X_i in the model on the exogenous variable, but not those which intervene between X_i and the outcome (Alwin and Hauser, 1975; Lewis-Beck, 1974; Finney, 1972, Duncan, 1975). For example, the reduced form equation for education is:

$$(3.5)\, EDUC = (\beta_6 + \beta_{12}\beta_6) + (\beta_7 + \beta_{12}\beta_1)\, FAOCC + (\beta_8 + \beta_{12}\beta_2)\, FAED + (\beta_9 + \beta_{12}\beta_3)\, MOMED + (\beta_{10} + \beta_{12}\beta_4)\, PARINC + (\beta_{11} + \beta_{12}\beta_5)\, ACQUIS + e_1.$$

Hence, $(\beta_7 + \beta_{12}\beta_1)$ represents the reduced form (or total) effect of father's occupation--directly and indirectly through enhancing academic ability--on educational attainment.

Equation 3.1 hypothesizes that scores on the 1955 ETS test of academic ability (ABL) are affected by the socioeconomic status origins of the respondent (or, conversely, by the socioeconomic achievements of parents). Two considerations lead me to assume the dependency of test scores on status origins. First, this specification allows for the possibility of a social class bias in tests of mental aptitude or academic ability, as is often assumed (Sexton, 1961; see also the discussions and analyses in Eckland, 1971 and Hauser, 1972). Second, human capital economists (e.g.; Liebowitz, 1974a, 1974b; but see Lindert, 1974) argue that a child's ability or aptitude is determined, in part, by parental "investments" of goods and time in the child's cognitive development. Such "investments", in turn, are thought to be affected by parental income and (especially) parental education. The SES-ability linkage, therefore, is thought to be indirect, although I lack direct data on the presumed mechanisms that maintain this linkage.[2] It should be noted, however, that the SES effect on aptitude, as estimated by equation 3.1, is spuriously inflated to the extent that both parental achievements and son's aptitude are jointly determined by parental genetic characteristics (see Jencks, et al., 1972; Hauser and Dickinson, 1974; Jensen, 1969; Williams, 1976).

In equation 3.2 I assume that educational attainment, as indexed by years of schooling completed, is directly affected by status background and ability. The relevance of measured ability for educational attainments is practically self-evident: men of higher ability will, in all likelihood, make better grades in high school, receive appropriate encouragement for educational advancement from those in a position to influence the adolescent, develop aspirations and orientations conducive to optimal performance in educational settings, enroll in (or be enrolled in) college-preparatory curricula , score higher on college entrance tests, etc. All of these affect the likelihood of continued enrollment. Socioeconomic origin, too, is expected to affect "school process" variables, even net of its influence through measured ability. That is, status background is assumed to directly affect performance, encouragement, and ambition, even net of aptitude, either through social class discrimination in the allocation of educational and affective resources, unmeasured socialization practices (see, for example, Elder, 1962a, 1962b; Rosen and D'Andrade, 1959), or the development of noncognitive personality and attitudinal traits presumed to be rewarded in schools (Gintis, 1971; Bowles and Gintis, 1976). Moreover, since progression through school entails both direct expenditures and foregone earnings ,parental income (or other indicators of parental status) may influence entrance into, and continuation in, programs of higher education.

Equations 3.3 and 3.4 state that labor market success, as measured by occupational status (OCC)[3] and annual earnings (EARN),[4] is dependent on status origins, ability, educational attainment, and, in the case of earnings, occupational status. Theoretically, the case for including socioeconomic status origins as direct determinants of earnings is unsatisfactory (see, however, Bowles, 1972). Earlier work with these data

(Alexander, Eckland, and Griffin, 1975; Griffin, 1976a), as well as Sewell and Hauser's (1972, 1975) analyses of the Wisconsin data, however, indicate that SES does directly influence earnings and, therefore, must be considered in analysis of intergenerational influences on adult achievement.

There are at least three clearly articulated, and oft-times competing, interpretations of the importance of schooling for market success. These may be labeled, respectively, the "productivity," "screening," and "attitudinal" hypotheses. The "productivity" argument, most often advanced by human capital economists (Mincer, 1958, 1970, 1974; Becker, 1964; Welch, 1974; Malkiel and Malkiel, 1974), postulates that formal schooling enhances work-related "productivity"; therefore, highly educated men are more likely to be hired for higher-status and higher-paying jobs. "Screening" or "signaling" theorists (Arrow, 1973; Taubman and Wales, 1973; Collins, 1971; Berg, 1970; Spence, 1973), maintain, often in explicit refutation of human capital theory, that educational institutions simply identify and certify individuals who, because of ability and/or motivation, would become "productive" without exposure to higher education. Finally, some Marxist economists (Bowles and Gintis, 1976; Edwards, 1976; Gordon, 1972a; Gintis, 1971; Bowles, 1973) argue that noncognitive attitudinal traits, especially those tapping such personality dimensions as subservience and docility, are rewarded in the work place and that these traits are also rewarded and therefore learned in schools.

Occupational status is included in the earnings equation because of the observed pay differentials associated with occupations, net of the characteristics of individuals employed in them. Again, there are alternative explanations for this dependency of earnings on occupational status. Status may be a proxy for the societal "functionality" of an occupation (Davis and Moore, 1945), its prestige or overall goodness (Hope and Goldthorpe, 1972; Siegel, 1971; Rossi, 1972; Featherman, Jones, and Hauser, 1975), the command of political resources of occupational incumbents (R. Hall, 1969), or demanding, challenging, and complex work (Malkiel and Malkiel, 1974; Spaeth,1976a; McLaughlin, 1975; Bridges and Berk, 1974). All of these characteristics of occupations are associated with higher wages and salaries (Temme, 1975; Siegel, 1971).

Earlier analyzes of the relationships among most of the variables have been reported elsewhere (Alexander, Eckland, and Griffin, 1975). The analysis presented here differs from previous work with these variables in two ways: our earlier work (1) did not include parental income as an explanatory variable; and (2) was restricted to men with non-farm origins because of our attempt to replicate the results of Sewell and Hauser (1972, 1975) with Wisconsin men from non-farm families. For the EEO men, however, farm-non-farm distinctions were of minor importance. Given the previous publication of very similar results, therefore, I will limit my discussion of equations 3.1-3.4 to the more important points.

3.3 Results

Table 3.2 presents the estimates of equations 3.1-3.4, as well as all reduced form estimates. The sample size for this analysis is 646. In addition to estimating the influence of separate status origin indicators I summarize the combined SES effects by a single coefficient (labelled "SES") through a procedure discussed in Heise (1972). In effect, the technique aggregates or blocks the separate effects of the individual status origin indicators with appropriate adjustment for the covariance among the indicators.

Ability

The only status variables exerting a sizeable impact on ABL are father's education (FAED) and material possessions (ACQUIS). Hence, human capital interpretations of the SES-ability linkage are partially supported by these data; paternal education and possessions appear to be the dominant status influences on ability, but maternal education, which should

TABLE 3.2

Effects of Father's Occupation, Father's Education, Mother's Education, Parental Income, Material Possessions, and Ability on the Education, Occupation, and Earnings of EEO Males (N=646)

Dependent Variables	FAOCC	FAED	MOMED	PARINC	ACQUIS	"SES"	ABL	EDUC	OCC	R^2
	Predetermined Variables									
A. Standardized Coefficients										
(1) ABL	.009	.199*	.012	-.018	.199*	.340				.1154
(2) EDUC	.160*	.147*	.040	.023	.177*	.413				.1706
(3) EDUC	.157*	.067	.035	.031	.096*	.289	.405			.3156
(4) OCC	.197*	.165*	-.022	-.047	.124*	.351	----			.1230
(5) OCC	.194*	.109*	-.026	-.042	.068	.270	.283			.1939
(6) OCC	.123*	.072	-.045	-.058	.015	.133	.063	.545		.3969
(7) EARN	.013	.005	.066	.121*	.114*	.246	----			.0605
(8) EARN	.013	.005	.066	.121*	.114*	.246	.004			.0605
(9) EARN	-.006	-.003	.062	.118*	.103*	.218	-.048	.117*		.0699
(10) EARN	-.019	-.012	.067	.125*	.101*	.216	-.056	.049	.125*	.0793
B. Metric Coefficients										
(1) ABL	.002	.220*	.016	.00001	.907*	----				
(2) EDUC	.020*	.107*	.034	.00001	.531*	----				
(3) EDUC	.019*	.048	.030	.00001	.289*	----	.267			
(4) OCC	.222*	1.103*	-.178	-.0002	3.417*	----				
(5) OCC	.219*	.726*	-.206	-.0002	1.865	----	1.711			
(6) OCC	.123*	.484	-.358	-.0003	.425	----	.380	4.98		
(7) EARN	3.	6.	106.	.1074*	632.*	----				
(8) EARN	3.	7.	106.	.1074*	632.*	----	.419			
(9) EARN	-1.	-4.	98.	.1043*	570.*	----	-57.	215*		
(10) EARN	-4.	-16.	109.	.1107*	557.*	----	-68.	89.	25.*	

*Coefficient is at least twice as large as its standard error.

have an equally strong if not stronger effect (Liebowitz, 1974a), is of negligible importance.

As was pointed out in the original research report, academic ability is but modestly determined by socioeconomic background, with $R^2 = .115$. This estimate of the SES-ability dependency is quite consistent with that observed in other studies (e.g.; Duncan 1968; Sewell and Hauser, 1975). Taken together, these studies indicate that if a social class bias does exist in aptitude tests, its impact is minimal. The overwhelming bulk of the variance in observed ability scores is orthogonal to socioeconomic origins, as measured here.

Educational Attainment

Years of schooling completed (EDUC) is equally sensitive to three of the status variables (FAOCC, FAED, ACQUIS--row 2), but about half of the effect of the father's education and possessions is due to ability (compare rows 2 and 3). Status origins and ability together explain almost 32 percent of the variance in this outcome, with ability "uniquely" accounting for about 15 percent. The effect of ability is about 40 percent larger than the combined influence of the five status origin variables. In Chapter 4, I will attempt to identify the schooling and social-psychological mechanisms responsible for the effect of ability and background on educational attainment.

Occupational Status

Rows (4)-(6) present the estimates of the equations for occupational status. Socioeconomic origins explain about 12 percent of the variance in occupational achievement (row 4), with paternal statuses (FAOCC, FAED) and possessions registering the strongest effects. Most of the overall influence of SES is indirect, through ability and (especially) education (compare row 4 with rows 5 and 6). Occupational inequality is maintained across generations, then, primarily (but not exclusively) because men from high status backgrounds acquire educational certification and, ultimately, high status jobs.

Education registers by far the strongest influence on occupation (see the standardized coefficients, row 6), followed by "SES" (primarily FAOCC and FAED). Each year of schooling increases son's occupational attainment by 5 status points. Assuming linearity of effects, therefore, a college degree is "worth" about 20 status points (almost one standard deviation) more than a high school diploma. The inclusion of schooling also doubles the explained variance in occupational status, to 40 percent. Educational attainment, thus, "uniquely" accounts for one-half of the total explained variance in occupational achievement, even though it itself is moderately determined by SES and ability (row 3).

Of the total education-occupation association, only 11 percent (1 - .543/.613) is due to the dependence of both these career attainments on status origins and academic ability. This estimate of spuriousness is comparable to that obtained with other data (Sewell and Hauser, 1975; Duncan, Featherman, and Duncan, 1972; Griffin, 1976a).

While the influence of education in positioning men in the occupational status hierarchy is dramatic, the importance of socioeconomic status origins for occupational success should not be ignored. For men of equal ability and schooling, sons of fathers with college educations average 3.9 status points more than sons of fathers with only a grade school education. Similarly, sons of fathers employed in 1955 as engineers (average SEI = 85) average 6.2 status points more than sons whose fathers were operatives (average SEI = 35) in 1955. Other studies have also documented such direct intergenerational occupational status "inheritance" (Blau and Duncan, 1967; Duncan, Featherman, and Duncan, 1972; Sewell and Hauser, 1972; Griffin, 1976a).

Earnings

The estimates of the earnings equations are presented in rows (7)-(10). In row (7) we see that SES accounts for 6 percent of the variance in earnings, a statistic considerably smaller than that obtained for the comparable education and occupation equations (compare rows 2, 4, and 7). Material possessions and parental income both register significant, though relatively small, total effects on son's earnings. Measured ability is found to be essentially irrelevant to our understanding of earnings attainments (row 8). It neither contributes uniquely to explained variation nor mediates any of the impact of status origins. Other studies (e.g.; Sewell and Hauser, 1972, 1975; Duncan, 1968; Spaeth, 1976a; Jencks, et al., 1972) also report small net ability-earnings effects, thus seriously questioning any "IQ"-based theories of income distribution (e.g.; Herrnstein, 1971).

Net of SES and ability, each year of schooling completed is worth $215 per year (row 9). Roughly 60 percent of education's total effect is due to placing men in higher paying jobs and another 40 percent is due to increasing earnings within status categories (compare rows 9 and 10). Educational attainment, however, adds only 1 percent to R^2 and transmits very little of the explanatory impact of the important status origin variables; i.e., possessions, mother's education, and parental income. Only 10 percent of the effect of maternal education and possessions and 3 percent of the efficacy of parental income can be attributed to the fact that men from higher status backgrounds complete more schooling. Similar direct influences of SES background on earnings have appeared in several other investigations of the determinants of earnings or wage rates (Spaeth, 1976a; Sewell and Hauser, 1972, 1975; Bowles, 1972, 1973; Bowles and Nelson, 1974; Griffin, 1976a) and imply that crucial intervening variables are omitted from these analyses (see, for example, Bowles's (1973) discussion of "presentation of self" and its relationships both to social background and earnings).

The economic consequences of schooling, if assessed by the total education-earnings relationship (r = .167), are biased upward by 30 percent (1- .107/ .167) when relevant background characteristics which contribute to both schooling and earnings are not controlled. The comparable statistic obtained by Sewell and Hauser (1975) with their Wisconsin data is 35 percent (see also the discussions and data presented in Gintis, 1971; Griffin, 1976a; Griliches and Mason, 1973). Clearly, however, schooling does enhance earnings to a significant degree and, as I show in Chapter 5, even the net effect of education presented here underestimates the efficacy of schooling due to the omission from this model of post-schooling market experience (see Griffin, 1976b). Unfortunately, these data do not allow me to choose among the three interpretations (i.e.; the "productivity", "screening", and "attitudes" perspective) of the net schooling-earnings relationship. All are consistent with the data (see Layard and Psacharopoulos, 1974 for an empirical assessment of the "screening" versus "productivity" hypotheses).

Including occupational status in the earnings equation increases the variance explained by about one percent (row 10), with each status point increasing earnings by $25 per year. Occupational achievement, however, transmits none of the parental income effect on son's earnings (compare rows 9 and 10). Therefore, we cannot attribute the inter-generational income linkage to the fact that men from high income families are advantageously positioned in the occupational structure.

The results presented thus far suggest that occupational achievement and earnings attainments depend modestly on more than prior achievements; e.g., ability or schooling. Socioeconomic origins appear to exert a direct, modest influence on both dimensions of labor market success. On the surface, at least, this is consistent with positions of social critics (e.g.; Bowles and Gintis, 1976; Bowles, 1972, 1973), who argue that the distribution of economic rewards in America is not based exclusively on "merit." Before their conclusions can be accepted, however, a variety of other background variables, as well as adolescent schooling and early adult post-schooling experiences, must be considered. It is to the first of these expansions of the "basic model" to which I now turn.

3.4 Social Background

I have thus far focused my attention on the influence of social class or status origins in the socioeconomic achievement process. The effects of one's social background are not necessarily entirely captured by such status influences, however. Variables such as the structural integrity of the family of origin (i.e.; broken versus intact families), religious background, and number of siblings, while perhaps connoting social status or economic resources, are conceptually distinct from purely positional membership in a hierarchy of socioeconomic status. Such non-status background factors are occasionally hypothesized to affect educational and occupational careers. In this section, therefore, I explore the socioeconomic consequences of an expanded set of background variables. Specifically, I will assess the importance for early adult attainments of the following non-status background characteristics: structural integrity of family of origin, religious background, residential background, maternal employment, and number of siblings.

Structural integrity of the family may affect a man's educational and occupational success for several reasons: broken families; i.e.; ones in which both parents were not present while the child was growing up, may not provide a boy (a) stable family relations which perhaps are conducive to the development of a healthy self-image and a positive orientation toward the future; (b) a stable male role model, especially one engaged in gainful employment; or (c) the financial and social-psychological resources conducive to educational and occupational performance. Even though, as Gans (1967) and Duncan and Duncan (1968) have noted, an intact family does not ensure a stable family life or an effective male role model, some researchers have attributed great importance to the presumed pathological effects of broken families (Moynihan, 1965). Generally, past research suggests that "intactness" of family of origin has only marginal independent consequences for status attainments (B. Duncan, 1967; Duncan and Duncan, 1968; Duncan, Featherman, and Duncan, 1972; Hauser and Featherman, 1976), when evaluated in a context of models similar to my own.

Religious background may affect educational and occupational success through a variety of (largely unmeasured) mechanisms: child-rearing practices, educational tutoring, expectations, and encouragements (Rhodes and Nam, 1970); achievement-related values and motivations (Veroff, Feld, and Gurin, 1962; Rosen, 1959); adult work values and orientations (Featherman, 1971a; Duncan and Featherman, 1972); or, conceivably, through religiously-based educational and employment networks.

Residential background may be of significance by virtue of broader "contextual" or "community" influences and norms concerning education (see Sewell and Armor, 1966; Featherman, 1971b), employment opportunities for those who remain in the region in which they grew up, or community differences in school quality (Blau and Duncan, 1967; Welch, 1966, 1973a; Coleman, et al., 1966; McPartland and Sprehe, 1973). Any or all of these unmeasured variables, for which residential background serves as a loose proxy, may constrain educational and occupational opportunities.

Research on the impact of working mothers on sons' socioeconomic attainments is rare (but see Featherman and Carter, 1976), and I have no a priori expectations as to how (and if) this variable shapes adult careers. On the one hand, growing up in a family where the mother worked may have deleterious effects on the subsequent achievements of sons since the amount of time, guidance, and encouragement "invested" in the child by a working mother generally is less than that "invested" by a non-working mother. This hypothesized effect follows human capital theory (see Liebowitz, 1974a and the above discussion), but I know of no economist who has explicitly proffered this interpretation. On the other hand, working mothers contribute to the financial resources of the family, thereby increasing the likelihood that the family could purchase "learning" materials for the child and/or subsidize an adolescent's higher education. Moreover, the experience of having a working mother may acclimate the child to the world of work and instill within the child a positive orientation toward work. If these are the predominant effects working mothers may therefore have an enhancing effect on sons' adult adjustment and success.

The size of the parental family, as indexed by number of siblings, is expected to have a depressant effect on achievement for any or all of the following reasons: (1) as the number of children increases, parents, faced with a finite time available for child care (in its broadest sense), generally can devote less time and attention to each child. This results in children from large families receiving less parental supervision, tutoring, or encouragement; (2) similarly, parents have less monetary resources available for the educational expenditures for each child; and (3) children with a large number of siblings perhaps face a greater probability of having to drop out of school, or discontinue their formal education at critical points (such as the high school-to-college transition) in order to help financially support their parents or siblings (for more elaboration on these hypothesized effects see Lindert, 1974). The adverse effect of large sibships on educational attainment is well documented (Hauser and Featherman, 1976; B. Duncan, 1967;

Blau and Duncan, 1967; Duncan, Featherman, and Duncan, 1972; Featherman, 1971b).

3.5 Results

The unadjusted effect (i.e.; with no controls) of these non-status background variables is presented in Table 3.3. With the exception of family structure (INTACT), all background characteristics significantly influence at least one adult outcome. Consider first religious background. Individuals from Presbyterian-Episcopalian and Jewish backgrounds, when compared to lower-socioeconomic status and more religiously fundamentalist Protestants, receive, on the average, 1.1 and 3.7 more years of education, respectively, and 7 and 25 more occupational status points. Additionally, the average annual earnings of men from Jewish backgrounds are almost $4,000 more than that of low-status Protestants. Catholics, on the other hand, acquire six-tenths of a year less education and enter occupations averaging 6 status points less than low-status Protestants. Attending a school in the West in 1955 penalizes men by over 8 occupational status points and almost $1,000 annually when compared to men attending schools in the non-West in 1955.[5] Living in a metropolitan area in 1955 significantly increases all adult attainments: on the average, men who grew up in metropolitan areas attain about 1.5 years more schooling, achieve occupational positions

TABLE 3.3

Gross Effects of Social Background on Education, Occupation, and Earnings of EEO Males (N=521)

Metric Coefficients		EDUC	OCC	EARN
Structural Integrity of Family of Origin				
INTACT versus BROKEN		.285	-1.681	46.312
Religion of Family of Origin				
PRES-EPISC	versus LOW STATUS PROTESTANT	1.123*	7.069*	530.000
CATHOL		-.655*	-6.168*	804.000
JEWISH		3.718*	25.107*	3925.000*
Residential Background				
WEST versus NONWEST		-.344	-8.279*	-979.000
METRO versus NONMETRO		1.455*	8.905*	1326.000*
Working Mother				
MOMWORK versus NON-MOMWORK		-.083	-1.690	-807.000*
Siblings (per sib)		-.351*	-1.699*	-221.000*

*Coefficient is at least twice its standard error.

almost 9 status points higher and earn over $1,300 annually more than men who lived in a non-metropolitan area in 1955. Growing up in a family in which the mother worked results in son's earning $800 annually less and appears irrelevant to the other two career outcomes. Coming from a large family depresses all adult achievements: each sib "costs" the respondent on the average a third of a year of education, almost two occupational status points, and about $220 annually.

Featherman (1971a) correctly argues that estimating only the unadjusted effects of such background characteristics is misleading because of the confounding of socioeconomic status and religious background, residential family, size of parental family, etc. Accordingly, I next assess these effects when the five status origin indicators are controlled.

Due to missing data on the additional background variables, the sample size for this part of the analysis is reduced to 521. In order to evaluate the consequences of this additional sample attrition, I re-estimated equations 3.1-3.4, which, it will be remembered, limit background influences to status origins. Comparisons of these results (Table 3.4) with those previously noted, i.e. based on the original 646 respondents (Table 3.2), indicate that with one exception, the effects of all variables are quite similar in both samples. The exception is the estimated effect of father's

TABLE 3.4

Effects of Father's Occupation, Father's Education, Mother's Education, Parental Income, and Ability on the Education, Occupation, and Earnings of EEO Males (N=521)

Dependent Variables	Predetermined Variables									
	FAOCC	FAED	MOMED	PARINC	ACQUIS	"SES"	ABL	EDUC	OCC	R^2
A. Standardized Coefficients										
(1) ABL	-.002	.225*	-.021	.013	.203*	.360				.1297
(2) EDUC	.175*	.105*	.072	.018	.205*	.430				.1845
(3) EDUC	.175*	.011	.081	.010	.121*	.300	.416*			.3353
(4) OCC	.197*	.099	.061	-.038	.136*	.354				.1251
(5) OCC	.198*	.034	.067	-.043	.078	.271	.288*			.1974
(6) OCC	.105*	.028	.024	-.041	.014	.123	.069	.527*		.3820
(7) EARN	.067	-.039	.090	.104*	.120*	.259				.0669
(8) EARN	.064	-.045	.091	.104*	.115*	.252	.020			.0674
(9) EARN	.047	-.046	.082	.102*	.101	.221	-.024	.115*		.0762
(10) EARN	.030	-.050	.077	.110*	.099	.212	-.035	.028	.165*	.0930
B. Metric Coefficients										
(1) ABL	-.0003	.2580*	-.0287	.0000	.9342*	---				
(2) EDUC	.0214*	.0788*	.0631	.0000	.6212*	---				
(3) EDUC	.0215*	.0084	.0709	.0000	.3660*	---	.2731*			
(4) OCC	.2176*	.6691	.4772	-.0002	3.700*	---				
(5) OCC	.2182*	.2303	.5259	-.0002	2.112	---	1.701*			
(6) OCC	.1163*	.1907	.1899	-.0002	.3772	---	.4063	4.739*		
(7) EARN	14.	-50.	135.	.0891*	623.*	---				
(8) EARN	14.	-57.	137.	.0887*	598.*	---	27.			
(9) EARN	10.	-59.	123.	.0877*	526.	---	-27.	196.*		
(10) EARN	6.	-65.	117.	.0945*	514.	---	-39.	47.	31.*	

*Coefficient is at least twice as large as its standard error.

education (FAED) on son's occupation (OCC), with the reduced sample size (e.g.; Table 3.4) yielding somewhat smaller coefficients. When assessing the consequences of including non-status background variables in the achievement equations, therefore, the estimates presented in Table 3.5 (standardized coefficients) and Table 3.6 (metric coefficients)[6] must be contrasted with those presented in Table 3.4, rather than those in Table 3.2. Since the effects of SES were discussed in conjunction with Table 3.2, I will only briefly mention these influences.

Ability

Of the SES indicators, only father's education (FAED and the possessions index (ACQUIS) register significant influences on academic ability. Including the non-status social background characteristics into the ability equation reduces the estimated effect of paternal education by only 4 percent and that of ACQUIS by a considerably larger 23 percent (compare row 1, Table 3.4 with column 1, Table 3.5). The latter reduction is primarily due to the correlation of ACQUIS with metropolitan residence (r = .259) and JEWISH (r = .165). About a quarter of the estimated salutary effect of ACQUIS on ability, then, is due to the fact that parents who live in metropolitan areas and are Jewish are more likely to acquire such material and cultural goods. This corresponds nicely with popular stereotypes, as well as with the results of some scholarly research, on the different types of "learning" environments available in households differing in location and religious orientation (Featherman, 1971b).

The results presented in Table 3.5 indicate that of the non-status background factors only being reared in Catholic, Jewish and metropolitan families importantly affects academic ability. Compared to men from low-status Protestant households, those from Catholic families score almost 1 point lower on the 1955 ETS ability test, while respondents with Jewish backgrounds obtain ability scores almost 2.5 points, or about .6 of a standard deviation, higher. As I noted above, the religious background influences probably tap a range of unmeasured socialization or achievement-related variables rather than innate "genetic" differences among religious groups.

Men residing in metropolitan areas as children and adolescents score about .8 points higher than those who lived in non-metropolitan areas. These estimates, of course, are net of SES and differences in measured ability. For any or all of the reasons discussed above, then, religious background and residential location do influence academic ability. All status and non-status background characteristics together account for about 18 percent of the variance in ability, with the latter cluster of variables "uniquely" responsible for about 5 percent of the total variance.

Education

Taken together, all background factors account for 26 percent of the variance in educational attainment,[7] with father's occupation, possessions, and a Jewish background registering statistically significant effects (column 2, Table 3.5). Additionally, father's education (FAED) exercises a not unimportant influence on years of schooling completed though it just falls short of conventional levels of statistical significance. Net of all other variables in the model, a hypothetical upward shift in father's occupational status of 10 points yields an increase in son's educational attainment of 1.6 years (compared to 2.1 years as estimated in Table 3.4), and a one year increase in father's education results in a gain of .07 years (compared to .08 years as estimated in Table 3.4). A one unit increment in ACQUIS produces about a half-year increase in educational attainment (compared to .6 as estimated in Table 3.4). Net of SES, Jewish men receive more than 2.5 years more education than do men from low-status Protestant backgrounds, and only about 24 percent of this total effect is due to the mediating influence of ability (compare columns 2 and 3). Controlling for SES and ability, men from Jewish backgrounds still acquire fully 2 years more schooling.

Social background and ability account for 38 percent of the variance in educational attainment (column 3), with ability registering the strongest direct effect, followed by "SES" (primarily FAOCC and AQUIS) and JEWISH. The non-status background variables are responsible for explaining an additional 4.4 percent of this variance beyond that which can be accounted for by SES and ability (compare R^2's in column 3, Table 3.5 and row 3, Table 3.4). Comparisons of column 3 of Table 3.5 with row 3 of Table 3.4 indicate that the inclusion of non-status background factors into the education equation reduces the effects of father's occupation, possessions, and ability by 17,23 and 9 percent, respectively. While not trivial, these estimates of bias are not particularly large, suggesting that effects of the dependency of education on SES and ability are not seriously inflated due to the absence of such variables as family structure, religious background, number of siblings and residential location.

Occupational Status

Of the various background characteristics considered, only father's occupation, possessions, a Jewish background, and attending high school in the West in 1955 affect occupational status (column 4). This reduced form model explains 17 percent of the variance in occupational achieve-

TABLE 3.5

Effects of Social Background and Ability on the Education, Occupation, and Earnings of EEO Males (N=521), Standardized Coefficients

Predetermined Variables	(1) ABL	(2) EDUC	(3) EDUC	(4) OCC	(5) OCC	(6) OCC	(7) EARN	(8) EARN	(9) EARN	(10) EARN
						Dependent Variables				
FAOCC	-.033	.133*	.146*	.167*	.176*	.101*	.047	.047	.034	.018
FAED	.217*	.092	.009	.091	.035	.030	-.042	-.041	-.042	-.047
MOMED	-.015	.068	.074	.061	.065	.027	.115*	.115*	.108*	.104*
PARINC	.000	.023	.022	-.028	-.029	-.040	.103*	.103*	.101*	.107*
ACQUIS	.156*	.152*	.093*	.118*	.077	.030	.097	.098	.089	.085
"SES"	.296	.346	.254	.315	.255	.168	.243	.244	.223	.212
SIBS	-.062	-.074	-.051	.002	.018	.044	-.006	-.006	.000	-.008
INTACT	-.011	-.017	-.012	-.072	-.069	-.063	-.044	-.044	-.042	-.033
MOMWORK	-.073	.007	.035	-.025	-.006	-.023	-.064	-.064	-.068	-.064
PRES-EPISC	.002	.071	.070	.059	.059	.022	.018	.018	.011	.008
CATHOL	-.084*	-.063	-.031	-.071	-.049	-.033	.081	.081	.084	.089*
JEWISH	.115*	.184*	.140*	.142*	.112*	.040	.117*	.117*	.104*	.098*
WEST	-.020	-.080	-.073	-.119*	-.113*	-.076*	-.082	-.082	-.075	-.063
METRO	.089*	.067	.033	.016	-.007	-.024	.025	.022	.018	.022
ABL			.379*		.259*	.064		.000	-.035	-.050
EDUC						.514*			.091	.011
OCC										.155*
R^2	.1755	.2553	.3738	.1739	.2292	.3943	.0998	.0998	.1050	.1195

*Coefficient at least twice its standard error.

TABLE 3.6

Effects of Social Background and Ability on the Education, Occupation, and Earnings of EEO Males (N=521), Metric Coefficients

	Dependent Variables									
Predetermined Variables	(1) ABL	(2) EDUC	(3) EDUC	(4) OCC	(5) OCC	(6) OCC	(7) EARN	(8) EARN	(9) EARN	(10) EARN
FAOCC	-.0620	.0163*	.0179*	.1841*	.1936*	.1111*	10.	10.	7.	4.
FAED	.2486*	.0689	.0071	.6133	.2334	.2008	-54.	-53.	-54.	-60.
MOMED	-.0207	.0595	.0647	.4818	.5134	.2149	173.*	173.*	162.*	156.*
PARINC	.0000	.0000	.0000	-.0001	-.0001	-.0002	.0882*	.0882*	.0865*	.0919*
ACQUIS	.7213*	.4603*	.2809*	3.210*	2.108	.8114	505.	506.	462.	438.
SIBS	-.1450	-.1131	-.0770	.0264	.2479	.6036	-14.	-15.	-3.	-20.
INTACT	-.1390	-.1341	-.0995	-5.062	-4.849	-4.390	-584.	-582.	-566.	-437.
MOMWORK	-.5885	.0368	.1832	-1.170	-.2712	-1.117	-585.	-585.	-614.	-581.
PRES-EPISC	.0303	.6121	.6045	4.573	4.527	1.736	-261.	261.	167.	116.
CATHOL	-.9453*	-.4621	-.2270	-4.682	-3.238	-2.190	1022.	1022.	1058.	1122.*
JEWISH	2.477*	2.594*	1.978*	18.010*	14.224*	5.094	2819.*	2821.*	2512.*	2363.*
WEST	-.2213	-.5736	-.5186	-7.628*	-7.290*	-4.896*	-1001.	-1001.	-920.	-776.
METRO	.8267*	.4049	.1993	.9003	.3629	-1.283	223.	224.	193.	231.
ABL			.2487*		1.528*	.3800		-.654	-39.	-51.
EDUC						4.616*			156.	20.
OCC										30.*

*Coefficient at least twice its standard error.

ment. Each point of father's occupational status is worth on the average of .18 status points to their sons, while each parental possessions unit yields more than 3 status points for their male offspring. When compared to males from low-status Protestant families, those with Jewish backgrounds are employed in occupations averaging 18 status points higher (about three-fourths of a standard deviation). The total depressant effect of attending school in the West is about 7.5 status points.

Moving to academic aptitude, we see that each point of ability is worth 1.5 status points to these men (column 5). In addition to facilitating occupational status achievement, ability mediates about 35 percent and 21 percent of the effects of ACQUIS and JEWISH, respectively. Very little of the depressant effect of region is so mediated. The standardized coefficients presented in column 5 of Table 3.5 suggest that "SES" and ability are about of equal importance, both having effects about twice as large as those observed for JEWISH and WEST.

Social background, ability, and education together account for about 39 percent of the variance in occupational status achievement, with the latter variable uniquely accounting for about 16 percent of the total variance (column 6). Even with a multitude of social background characteristics and academic ability controlled, each year of educational attainment yields 4.6 status points, a statistic not notably lower than the bivariate slope between the two variables, 5.4 points. Schooling, therefore, does much more than simply signal the occupational structure that a man has the "right" social origins or measured ability; indeed, it appears to allow educationally certified men to partially overcome deficits in background or ability and to induce considerable variation in occupational status entirely independent of social background.

About 43 percent of the status enhancing efficacy of father's occupation is mediated by educational attainment; the comparable statistics for JEWISH and WEST are 64 and 33 percent, respectively. Thus, men from Jewish backgrounds acquire high status jobs primarily because of their greater academic ability and (especially) higher educational attainment. Even net of ability and education, however, attending a high school in the West directly retards occupational status achievement by 5 points. Finally, inclusion of all the non-status background variables only slightly affects the estimated effects of SES, ability, and education on occupation (compare column 6, Table 3.5 with row 6, Table 3.4).

Earnings

In the reduced form earnings equation mother's education, parental income, and JEWISH significantly, though modestly, influence earnings (column 7). Including the non-status indicators of background in this equation actually increases the earnings returns to mother's education over that estimated in their absence (compare column 7, Table 3.5 with row 7, Table 3.4). The reduced form MOMED coefficient suggests that each year of mother's education is worth $173 annually, of which only $17, or 10 percent,is mediated by ability, education, and occupation (compare columns 7-10, Table 3.5). This effect is consistent with, but of course does not prove, human capital interpretations of the role of mother's education in developing productivity and earnings-enhancing skills in children and adolescents (Liebowitz, 1974a; Ishikawa, 1975).

Men from Jewish backgrounds make on the average $2,800 (or .6 of a standard deviation) more annually than do men from low-status Protestant backgrounds, even after standardizing differences in religious backgrounds for socioeconomic status differences. Of the total effect of being Jewish, roughly 11 percent is due to schooling and another 6 percent is due to occupational placement. Hence, although men from Jewish backgrounds obtain more education and work in higher status jobs than do men from low-status Protestant backgrounds (columns 2 and 4, Table 3.5), this accounts for only 16 percent of the total salutary effect of a Jewish background. Even controlling for SES, ability, educational, and occupational advantages, men from Jewish families still make almost $2,400 more per year than men from lower-status Protestant backgrounds, other things being equal. I should note that these data are on earned income, rather than total income or wealth, and apparently do not reflect direct inheritance of wealth.

The earnings pattern for men from Catholic backgrounds differ somewhat from that described above for Jewish men. The reduced form CATHOL coefficient is positive but not statistically significant (column 7); however, after controlling for the educational and occupational deficits of Catholic men, the direct effect of a Catholic background is positive and statistically significant, $1,122 annually (column 10). Catholic men do not earn more than low-status Protestant men primarily because they lack educational certification and access to higher paying jobs. When these barriers to higher earnings are statistically controlled (or removed), Catholic men earn about $1,100 more than do men from low-status Protestant backgrounds with comparable levels of education and similar occupational placements.

Moving now to the influence of education on earnings, I note that of the total education-earnings relationship ($r = .1857$) 38 percent is due to the joint dependence of the two variables on socioeconomic status origins and ability

(1- .115/.186; column 7, Table 3.4). The earnings-enhancing effect of schooling is further reduced by 13 percent when controls are also added for the remaining background variables. As estimated in column 9, Table 3.5, each year of education is worth $156, fully $162 less than suggested by the bivariate slope ($318). Unbiased estimates of the economic returns to higher education, thus, require consideration of the degree to which both earnings and schooling are jointly determined by achieved and ascribed familial and adolescent statuses, especially social background. These data suggest that much of the economics literature, which generally excludes consideration of social background influences on economic attainments, may present artifactually inflated "payoffs" to schooling.

In addition to itself significantly enhancing earnings, occupational status also mediates 87 percent of the total effect of educational attainment (compare column 9 with column 10). As estimated in Table 3.5, each occupational status point is worth $30 annually, almost identical to the statistic presented in Table 3.4. Although affecting both occupation and earnings, non-status background influences have virtually no effect on the occupation-earnings relationship.

Finally, of particular interest to this analysis is the "unique" contribution of non-status background factors in increasing the variance explained in earnings. Comparisons of the R^2's presented in column 10, Table 3.5 and row 10, Table 3.4 indicate that this additional variance explained is 2.7, or a proportional increase of about 28 percent.

3.6 Unadjusted Versus Net Non-Status Background Effects

In Table 3.3 above, I presented the unadjusted effects of a myriad of non-status background variables on education, occupation, and earnings, with many found to be significant. Yet after controlling only for socioeconomic origins (columns 1, 2, 4, and 7, Table 3.5), most of the effects of these variables were reduced to statistical and substantive insignificance. Clearly, then, much of the depressant or beneficial influence of non-status origin characteristics is due to the covariance of these factors with socioeconomic status origins. Thus, the net influence of family structure, working mother, number of siblings, and residential location is relatively minor (although in a few instances still non-negligible).

The only non-status background variable of marked importance is religious background, and even here the effects are limited to men reared as Catholic or Jewish (as opposed to lower-status Protestants). There appears to be no difference in the achievements of high- and low-status Protestant men once adjustments are performed for SES differentials. These results both conform to and differ from those presented by Featherman (1971a). Featherman found that Jewish men did indeed earn substantially more in their early careers than men with other religious affiliations but his estimate of the net effect, $713, is markedly lower than estimated with these data. Featherman also found that Catholic men earn somewhat less, again differing from the results presented above. My results are not strictly comparable with those presented by Featherman (1971a), however. He includes ethnic membership in his categorizations of religious affiliation ("religio-ethnic subgroups") and he relied on current religious preference as a proxy for religious background. Despite the methodological discrepancies between his and my study, both agree that men from Jewish backgrounds have higher levels of career attainments than Protestant men, with other things equal. At this point in the analysis, we do not know why this effect exists. In the next chapter, I will explore the degree to which the socioeconomic advantages of Jewish men hinge on certain schooling experiences and social-psychological encouragements and motivations, issues which Featherman was unfortunately unable to pursue.

3.7 Conclusions

The purpose of this chapter was to estimate two "basic" models of socioeconomic achievement. The first model purports to "exhaust the influence of fundamental conditions of ascription and achievement" (Sewell and Hauser, 1975:184), considering, as it does, socioeconomic status origins, academic ability, schooling, and occupational status and earnings attainments. Estimation of this model demonstrated the importance of status origins in directly and indirectly influencing adult educational and labor market outcomes. Even net of ability, social class modestly affects years of schooling completed and, net of ability and educational attainment, occupational achievement and earnings.

The second model expanded the concept of social origin to include several non-status background characteristics: religion of family of origin, number of siblings, geographic location and urbanization of community of origin in 1955, working mother, and structural integrity of family of origin. I found that estimates of the effects of socioeconomic status origins were but modestly affected by the inclusion of these non-status background factors. Nonetheless, parental religion and attending school in the West in 1955 significantly affected adult achievement and their inclusion in my socioeconomic models did increase the explained variation in education, occupation, and earnings. Several speculative interpretations of the background effects were offered, some of which will be tested in Chapter 4. In the next chapter, I will examine the role of schooling and social-psychological variables in affecting career outcomes and in mediating social origin and academic ability influences on adult achievement.

FOOTNOTES

1. Much human capital literature (Mincer, 1970, 1974; Blinder, 1973) suggests that education influences labor market success nonlinearly, whereas the analyses reported assume linearity of effects. In the occupational status equation containing all background variables (see section 3.5), I substituted for the continuous education variable five dummy variables representing levels of educational certification (some college, college graduate, some graduate education, master's degree, and doctor's degree). The linear education specification yielded an R^2 of .39428 (see column 6, Table 3.5), while the non-linear specification resulted in an R^2 of .39681. The increment to R^2, .00253, was not significant at the .05 level ($F_{4,501} = .5254$). In the earnings equation, I employed the five educational dummies as well as four occupational status dummies representing occupational SEI scores of 20-40, 40-60, 60-80, and above 80. Hence, for the earnings equation, the non-linear education and occupational status specifications use 7 degrees of freedom more than does the linear specification. The linear specification yielded an R^2 of .1195 (see column 10, Table 3.5), while the nonlinear equation resulted in an R^2 of .13486. The differences in R^2's, .01536, is not significant at the .05 level ($F_{7,497} = 1.26$). Thus, I believe that I can safely assume that the linear occupation

and earnings equations are appropriate for these data.

2. The acquisition index (ACQUIS) may serve as a proxy for some of these "investments", however, since it includes such items as books, magazines and newspapers, encyclopedias, and a map or globe of the world. Any or all of these possessions may be used by the child or adolescent as "learning" tools and thereby affect cognitive growth.

3. As noted in Chapter 2, I use Duncan's (1961) SEI measures as my indicator of occupational achievement in this section of the thesis. While this is the most widely used measure, other researchers prefer the use of occupational prestige (Trieman, 1976; Siegel, 1971). Hope and Goldthorpe (1972), however, criticize the SEI measure precisely because it is based on occupational prestige. For empirical assessments of the differential sensitivity of prestige versus socioeconomic indicators of occupational attainment to common antecedents, see Featherman, Jones, and Hauser (1975), Duncan, Featherman, and Duncan (1972), and Garnier and Hout (1976). All conclude that the basis of social mobility in Western societies is socioeconomic status rather than prestige (see also Klatsky and Hodge, 1971).

4. Consistent results for the full background equations (see Section 3.5 and Table 3.5) are obtained using the natural logarithms of occupational status and annual earnings.

5. Three 1955 residential location dummies were originally included in these equations, WEST, NORTH CENTRAL, and NORTH EAST. Only living in the West registered effects significantly different from those evidenced for living in the South (the suppressed category); therefore, only WEST (versus non-West) is included in the analysis.

6. When references are made in this discussion to either standardized coefficients or R^2's, the appropriate table to consult is Table 3.5. For the presentation of metric coefficients, see Table 3.6.

7. Hauser and Featherman (1976) argue that the correlations between brothers' educational attainment indexes the variance in schooling attributable to the global effects of families (see also Jencks, et al., 1972; Duncan, Featherman, and Duncan, 1972). Based on observed correlations presented in Hauser and Featherman (1976), the proportion of variation appears to be about .55 for men around 30 years of age. Hence all of my background variables account for about 50 percent of the total influence of family factors in determining educational inequality.

Chapter 4

A SCHOOL PROCESS MODEL OF ACHIEVEMENT

I evaluate, in this chapter, the degree to which interpersonal network and school process variables both mediate the effects of social background and ability on adult success and independently stimulate or retard adult achievement. Two "school process" models of education, occupation, and earnings are specified and estimated. The first includes socioeconomic origins, religious background, geographic residence in 1955, ability, and a number of social-psychological and school selection and sorting variables. The second includes, in addition to background and ability, only those "school process" variables which significantly influence at least one adult outcome, as evaluated by the first model. The deletion of nonsignificant schooling variables retains as large a case base as possible and presents a parsimonious interpretation of the role of adolescent and schooling variables.

4.1 School Process and Social-Psychological Influences

In addition to social background and ability, the variables to be considered in this chapter are: significant others' influence (e.g.; parental, teacher, and peer influences on educational plans); ambition (e.g.; educational expectations and occupational aspirations); academic experiences (e.g.; senior year enrollment in vocational and college preparatory curricula, senior year class rank, and total number of scientific and mathematics courses taken in high school); and academic self-image. With the exception of high school coursework and vocational curriculum, the effects of these variables have been considered in a number of publications with these data (Alexander and Eckland, 1973, 1974, 1975a, 1975c; Alexander, Eckland, and Griffin, 1975). Previous work with these data and variables, however, did not estimate the importance of nonstatus origin variables on schooling and labor market experiences. Hence, the data presented in this chapter link for the first time important background characteristics not previously considered (e.g.; parental religion) with adolescent developmental processes.

The impact of significant others represents two kinds of socialization influences: modeling and tutoring (for a good conceptual discussion of these issues, see Picou and Carter, 1976 and Haller and Portes, 1973). The efficacy of peers is indexed by the respondent's perceptions of his friends' college plans, while the influences of teachers and parents are measured by the degree to which these adults talk to the respondent about college. Clearly, the former represents potential modeling effects; i.e.; the establishment of a role model to be emulated, while the latter two possibly represent indirect tutoring (coaching or teaching) effects. Thus it is not entirely clear how significant others affect the respondent's attitudes or behaviors. Nevertheless, however, such influence is transmitted to the respondent, my initial hypothesis is that interpersonal support will directly stimulate educational attainment. Such influences may contribute to the adolescent's knowledge of educational opportunities, may instill (or reinforce) within the student the desire to continue in educational programs, or may establish interpersonal pressures for continued education.[1]

If educational expectations and occupational aspirations are construed to be indicators of "ambition" -- as is conventionally done (Sewell, Haller, and Portes, 1969; Kerckhoff, 1974; Hauser, 1972; Porter, 1974, 1976) -- then students with greater aspirations and/or expectations may enjoy greater achievements through their efforts to actualize such plans. The specific mechanisms of influence are not of concern here. Interpretations of educational and occupational plans as "ambition" require only the assumption that these goal orientations direct and motivate the child or adolescent in ways conducive to career achievement (for more elaborate interpretations of the role of "ambition," see Crockett, 1962; Lipset and Bendix, 1959).[2]

Academic self-image is assumed to directly affect educational attainment. My rationale for hypothesizing this effect is that, ceteris paribus, academically self-confident individuals will be more likely to enroll and complete programs of higher education. They may acquire more information about educational opportunities, work somewhat harder in school, or engage in any number of other educationally-enhancing activities simply because they believe that they will benefit from such expenditures of time and money (for further discussion of the presumed importance of self-concept, see Gordon, 1972).

Most of the interpersonal and social-psychological variables are hypothesized to affect only years of schooling completed. The primary exception is occupational aspirations, which I assume will directly stimulate occupational achievement. The final schooling variables to be discussed -- academic experiences -- however, are hypothesized to directly affect educational, occupational, and economic attainments. By academic experiences I mean curriculum tracking, number of mathematics and science courses taken while in high school, and the evaluation by school personnel of the student's academic performance (e.g.; class rank).

The relevance of curricula for educational and socioeconomic achievements is the subject of several papers (Heyns, 1974; Parsons, 1959; Alexander and McDill, 1976). Alexander and McDill (1976) argue that college preparatory curricula "...identify those youth deemed suited for college and equip them with skills, knowledge, values, and interests appropriate for their future educational and subsequent adult pursuits." The hypothesized impact of college preparatory curricula is on educational attainment, but it is also assumed that the consequences of this academic experience variable may not be limited to education. Effective job performance may depend, to some extent, on the skills and attitudes learned in a college preparatory track. Enrollment in a vocational track, on the other hand, may also equip students -- especially those who will eventually lack college certification -- with specific job-related skills. These skills may, in turn, be rewarded in the workplace in the form of increased status or earnings. The evidence on the economic impact of vocational programs in secondary schools is weak and inconsistent (compare Hu, et al., 1971 and Baker and Levenson, 1976). My results will further assess the utility for adult outcomes of academic and vocational tracking.

Preparation for more advanced study and jobs requires extensive preparation in mathematics and, possibly, science. Most work, for example, entails at least rudimentary basic computational and scientific skills, and a large number of jobs require extensive knowledge of such subject matters (Temme, 1975). I hypothesize, therefore, that even controlling for other pertinent factors, the number of mathematics and science courses taken in high school positively influences labor market success. My assumption is that such course work may increase the student's work-related skills, though the consequences of exposure to learning situations remains an unanswered question (see, for example, Karweit, 1976b and Wiley, 1973).

Academic performance, or more concretely class rank, possibly indicates the student's judged level of performance in his high school course of study. A high class rank presumably suggests that the student has applied himself, learned relevant material, and, in a broad sense, increased the complexity of his cognitive structure. Even if academic performance primarily reflects certain attitudes, such as an orientation to extrinsic rewards or docility rather than academic mastery, these attitudes are assumed to be rewarded both by school personnel and employers (Bowles and Gintis, 1976; Gintis, 1971). College attendance clearly depends on high school performance (Alexander and Eckland, 1973, 1974; Sewell, Haller, and Portes, 1969; Sewell and Hauser, 1975; Porter, 1974) and job performance may require the sort of skills, attitudes, or other traits indexed by class rank. For these reasons, then, I hypothesize that class rank should enhance adult socioeconomic achievement.

Although I have given rather specific reasons for considering the above variables, my interest in schooling experiences is rather general. First, school sorting and selection mechanisms and social-psychological variables expand qualitatively the concept of educational attainment. Adopting, for a moment, a human capital perspective, I would argue that investments in human capital ideally are not adequately measured by simple quantitative indices like years of school completed. Education, but not necessarily years of school completed, implies learning. If learning settings (at present, schools) are entirely devoid of skill-enhancing attributes, there have been no investments in human capital and a child's or worker's future productivity, therefore, has not increased, regardless of the number of years spent in school. Access to motivated and encouraging teachers, functionally necessary course work, and more able and ambitious peers may constitute critically important "within-school school resources" (Heyns, 1974; Alexander and McDill, 1976). By including such variables in occupational status and earnings functions, I am attempting to determine whether and how school processes and educational experiences structure socioeconomic achievements.

Previous research has shown how schooling experiences may maintain the linkage between beginning statuses or class position and level of educational attainment (Sewell, Haller, and Portes, 1969; Sewell and Hauser, 1972, 1975; Porter, 1974, 1976; Alexander and Eckland, 1974). In Chapter 3 I documented the educational and occupational advantages of men from certain backgrounds and ability levels. Directing attention to what happens during the critical adolescent years may further elucidate the transmission of social and economic inequality from generation to generation.

4.2 Model 1

Model 1 consists of the following three relationships:

(4.1) EDUC = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, CATHOL, JEWISH, WEST, ABL, RANK, PARENT, TEACH, PEER, EDEXP, OCCASP, COLCUR, VOCCUR, COURSE, IMAGE);

(4.2) OCC = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, CATHOL, JEWISH, WEST, ABL, RANK, PARENT, TEACH, PEER, EDEXP, OCCASP, COLCUR, VOCCUR, COURSE, IMAGE, EDUC);

(4.3) EARN = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, CATHOL, JEWISH, WEST, ABL, RANK, PARENT, TEACH, PEER, EDEXP, OCCASP, COLCUR, VOCCUR, COURSE, IMAGE, EDUC, OCC),

where all variables are defined in Table 4.1. The variables are assumed to be perfectly measured and, furthermore, the relationships are assumed to be linear and additive. Only those non-status background variables exercising a significant direct effect on at least one of the adult outcomes were retained for analysis in this chapter. Therefore, based on the results presented in Chapter 3, the following non-status background variables were deleted: metropolitan residence in 1955, number of siblings, structural integrity

TABLE 4.1

Variable Descriptions, Means, and Standard Deviations of All Variables Used in Chapter 4

Variable Symbol	Variable Description	N=486		N=576	
		$\overline{X}$	σ	$\overline{X}$	σ
FAOCC	Father's occupation	39.62	21.66	39.77	21.56
FAED	Father's education	10.14	3.60	10.06	3.62
MOMED	Mother's education	10.82	3.00	10.75	3.01
PARINC	Parental income	8658	5812	8499	5624
ACQUIS	Material possessions	.031	.885	.011	.874
CATHOL	Catholic	.142	.349	.144	.352
JEWISH	Jewish	.031	.173	.033	.179
WEST	Lived in west in 1955	.169	.375	.168	.375
ABL	Academic ability	7.83	3.99	7.68	3.98
PARENT	Parental encouragement	2.27	.649	2.23	.668
TEACH	Teacher encouragement	1.66	.597	----	----
PEER	Peer college plans	5.02	1.61	5.00	1.60
EDEXP	Educational expectations	2.00	.821	1.97	.824
OCCASP	Occupational aspirations	57.67	26.31	----	----
COLCUR	Senior college track	.438	.497	.431	.496
COURSE	Science and math courses	7.74	4.14	7.70	4.15
RANK	Senior class standing	1.96	1.34	1.92	1.34
VOCCUR	Senior vocational track	.095	.293	----	----
IMAGE	Academic self-image	.878	.779	----	----
EDUC	Educational attainment	14.65	2.59	14.60	2.62
OCC	Occupational status	52.74	23.66	52.93	23.87
EARN	Annual earnings	11213	4676	11305	4898

of family of origin, working mother, and Presbyterian-Episcopalian religious background. Finally, I should note that no attempt is made to causally order the school process and social-psychological variables in this section of the analysis. Such specifications will be deferred until non-significant variables are deleted based on the results of equations 4.1-4.3.

The coefficients deriving from OLS estimation of the three equations are presented in Table 4.2. Consider first the results for educational attainment. Class rank, peer influences, educational expectations, and college preparatory curriculum, among the adolescent or schooling variables, significantly, and directly, influence years of schooling completed. Of this same set of variables, only scientific and mathematics courses taken (COURSE) significantly influence occupational status, while parental encouragement and courses directly determine earnings. These results broadly conform to the results obtained by Sewell and Hauser (1972, 1975) and Hauser, Sewell, and Alwin (1974) with the Wisconsin data, though exact comparability between our results and those of Sewell and his associates is not possible due to differing modeling specifications.

TABLE 4.2

School Process Model of Education, Occupation, and Earnings of EEO Males (N=486)

Independent Variable	Dependent Variable EDUCATION		OCCUPATION		EARNINGS	
FAOCC	.008[a]	.063[b]	.051[a]	.047[b]	-1.[a]	-.006[b]
FAED	.025	.034	.345	.052	31.	.024
MOMED	.021	.024	-.254	-.032	141.	.091
PARINC	.000	.015	-.000	-.028	.1145*	.142*
ACQUIS	.060	.020	-.383	-.014	462.	.087
CATHOL	.207	.028	-1.792	-.026	1817.*	136*
JEWISH	1.248*	.083*	4.171	.031	2691.*	.100*
WEST	-517*	-.075*	-2.283	-.038	-557.	-.045
ABL	.112*	.172*	.074	-.012	-114.	-.097
PARENT	.097	.024	-.246	-.007	1070.*	.148*
TEACH	.050	.012	.614	.015	124.	.016
PEER	.186*	.115*	-.067	-.005	-3.	-.001
EDEXP	.456*	.144*	1.053	.037	-553.	-.097
OCCASP	.003	.033	.060	.067	-5.	-.031
COLCUR	.666*	.128*	2.381	.050	-943.	-.100
COURSE	.048	.077	.592*	.104*	133.*	.118*
RANK	.330*	.170*	.242	.014	-128.	-.037
VOCCUR	-.070	-.008	-4.602	-.057	597.	.037
IMAGE	-.087	-.026	.923	-.030	261.	.043
EDUC			4.324*	.474*	75.	.042
OCC					20.*	.102*
R^2	.450		.420		.156	

[a] The first column of each dependent variable presents metric coefficients.

[b] The second column of each dependent variable presents standardized coefficients.

*The coefficient is at least twice its standard error.

The failure of occupational aspirations, academic self-image, and vocational curriculum to directly determine any adult outcome is of special interest. Net of the other variables in the model, occupational aspirations have little apparent influence on occupational achievement. While earlier work with these data indicated that this dimension of ambition did affect occupational and status attainment (Alexander, Eckland, and Griffin, 1975), standardized occupational aspiration coefficients are very nearly the same in both analyses (.067 as reported in Table 4.2 versus .084 in the earlier study). Moreover, the Alexander, Eckland, and Griffin (1975) results were based on a larger sample (N=521) and fewer control variables (curricula tracking, self-image, and courses were not included in Alexander, Eckland, and Griffin's model).

I believe the failure of academic self-concept to affect even educational attainment, combined with the results obtained by Alexander and Eckland (1974) and Wilson and Portes (1975), who also failed to obtain an appreciable self-concept influence for whites, seriously questions the often presumed importance of such personality variables in adult achievement processes. These variables may be influential for minorities (see Portes and Wilson,

1976) and they may be interesting and valued outcomes in their own right, but they are apparently of little consequence for the socioeconomic attainments of white adults.

The failure of vocational curriculum to enhance any adult outcome also is of interest. Some researchers (Hu, et al., 1971) argue that for some students, vocational training in secondary schools may be an effective mechanism for enhancing economic achievement in later life. These data do not support that conclusion, nor do those presented by Baker and Levenson (1976).[3] In the absence of such positive effects, then, one must wonder about the functions of such tracking. Is it to "cool-out" low-achievers (Clark, 1960; Karabel and Astin, 1975)? Or does it provide a place to dispose of students with discipline or learning problems? In light of the ineffectiveness of vocational tracking in stimulating educational or occupational success (given the qualification expressed in footnote 3) -- presumably its ostensible role -- these issues deserve further research. A more detailed discussion of the remaining coefficients will be presented in conjunction with Model 2, below.

4.3 Model 2

Model 2 consists of the following relationships:

(4.4) ABL = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH);

(4.5) PEER = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL);

(4.6) PARENT = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL);

(4.7) EDEXP = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT);

(4.8) COLCUR = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP);

(4.9) COURSE = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP);

(4.10) RANK = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP);

(4.11) EDUC = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, COLCUR, COURSE, RANK);

(4.12) OCC = f(FAOCC, FAED, MOMED, PARINC, ACQUIS,

WEST, CATHOL, JEWISH, ABL, PEER, PARENT,
EDEXP, COLCUR, COURSE, RANK, EDUC);

(4.13) EARN = f(FAOCC, FAED, MOMED, PARINC, ACQUIS,
WEST, CATHOL, JEWISH, ABL, PEER, PARENT,
EDEXP, COLCUR, COURSE, RANK, EDUC, OCC).

The specification of equation 4.4 was discussed in detail in Chapter 2 and need not be recounted here. The temporal constraints of the variable measurement force an unambiguous causal ordering on some of the hypothesized relations. For example, peer and parental influences and educational expectations were measured in the tenth grade and, therefore, are temporally prior to curriculum enrollment, courses, and rank, which were tapped in the twelfth grade. Although contemporaneously measured, I assume, following Sewell and his associates (Sewell, Haller, and Portes, 1969; Sewell and Hauser, 1972, 1975), that educational expectations depend on significant others' influence.[4] Estimates of the above equations, as well as the corresponding reduced-form estimates, are presented in Table 4.3 (standardized coefficients) and Table 4.4 (metric coefficients).[5]

Because social background influences on academic ability were thoroughly discussed in Chapter 3, I discuss first the determinants of peer and parental influences on college attendance.

Peer and Parental Influences

Most of the social background indicators significantly, though modestly, influence association with college-oriented friends. Men from Jewish homes are more likely and men with Catholic backgrounds less likely than are Protestant men to associate with "ambitious" peers. The respondent's own measured aptitude also enhances the likelihood of being in a network of educationally-oriented students. Comparisons of column 2 and column 3 indicate, however, that ability mediates very little (only 10 percent) of the influence of SES origins or religious background on PEER. SES origins clearly register the strongest impact, with very little of this effect being conditioned by measured aptitude. It is likely that the substantial status-origin PEER linkage is due to status homophily in peer-group formation (Duncan, Haller, and Portes, 1968; Rhodes, Reiss, and Duncan, 1965), which is unmeasured in this model.

Parental influence follows the same broad pattern of effects, with substantial status origin (primarily ACQUIS) influences and a significant, but small, aptitude effect. Once more, ability, though modestly determined by social background, transmits only a negligible proportion (about

8 percent) of the positive influence of status background. Apparently, then, men from high status backgrounds are encouraged by their parents to continue their education beyond high school regardless of their ability. Being from a Catholic home slightly depresses parental encouragement to attend college, while Jewish students evidence no support "advantage."

Educational Expectations

Educational expectations are affected by parental education, material possessions, and religious background, with SES and JEWISH stimulating expectations and CATHOL depressing such plans. The small educational plans differences observed for men of Jewish or Catholic backgrounds are effectively reduced to zero once ability is controlled. About 20 percent of the variance in educational expectations is accounted for by a linear combination of background and ability variables (Table 4.3).

Adding the interpersonal support variables (PEER, PARENT) doubles this explained variance, to 40 percent (column 8). PEER and PARENT register almost identical standardized effects on this dimension of ambition and both social-psychological encouragement variables are about twice as important as their nearest rivals, SES and aptitude. Inclusion of PEER and PARENT, moreover, also suggests some of the specific mechanisms whereby status origins and ability affect expectations. Almost 50 percent of the SES influences and 30 percent of the ability influence are transmitted through the intervening encouragement variables. High SES and high ability men have college plans, in large part at least, because of interpersonal support from significant others. These results verify, I think, the propositions advanced by Sewell and his associates (Sewell, Haller, and Portes, 1969; Sewell and Hauser, 1972, 1975) about the critical role of reference groups in the development of goal orientations during the adolescent years.

Academic Experience

I now examine the social-structural and social-psychological determinants of three academic experience variables, college preparatory tracking, science and mathematics courses, and class rank.

Enrollment in a college preparatory curriculum is modestly affected by a variety of social background variables, predominantly by status origins, but also by a Jewish background (column 9). Living in the West in 1955 depresses the probability of being enrolled in a college track; this is consistent with my speculation in Chapter 2 that inferior school quality may be partially responsible for the net negative effect of WEST on years of schooling completed. That interpretation is now broadened to mean restricted access to important school resources (see also the negative WEST effect on COURSE, column 13).

Status origins and ability influence college tracking about equally. About 25 percent of the total status effect on college tracking is due to ability. Moreover, when controls are introduced for aptitude, the positive effect of a Jewish background is not significantly different from zero. Hence, men from Jewish background are more likely than equal status men from Protestant backgrounds to be in a college track, primarily because of their higher measured ability.

Selection into a college preparatory curriculum is not based exclusively on meritocratic considerations, if by "meritocratic," one means measured academic ability. Though I control for selected social-psychological variables measured in the tenth grade (PEER, PARENT, EDEXP) and, as a consequence, the direct effect of status origins is reduced somewhat (by 34 percent; compare columns 10 and 12), SES still registers a modest impact

TABLE 4.3

Trimmed School Process Model of Education, Occupation, and Earnings of EEO Males (N=576), Standardized Coefficients

	Dependent Variables									
Predetermined Variables	(1) ABL	(2) PEER	(3) PEER	(4) PARENT	(5) PARENT	(6) EDEXP	(7) EDEXP	(8) EDEXP	(9) COLCUR	(10) COLCUR
FAOCC	.010	.112*	.111*	.084	.083	.065	.063	.006	.118*	.115*
FAED	.189*	-.001	-.023	.059	.042	.123*	.085	.080	.094	.027
MOMED	.007	.108*	.107*	.024	.024	.096*	.095*	.056	.088	.087*
PARINC	-.027	.034	.037	.008	.011	.088	.094*	.080*	.043	.052
ACQUIS	.192*	.168*	.145*	.250*	.234*	.142*	.103*	-.008	.211*	.142*
"SES"	.320	.315	.283	.344	.318	.379	.320	.168	.415	.310
WEST	-.020	-.064	-.062	-.024	-.022	-.002	.002	.027	-.097*	-.090*
CATHOL	-.117*	-.159*	-.146*	-.123*	-.113*	-.083*	-.059	.016	.000	.042
JEWISH	.090*	.149*	.138*	.027	.019	.080*	.062	.016	.098*	.066
ABL			.118*		.088*		.200*	.140*		.358*
PEER								.293*		
PARENT								.292*		
EDEXP										
R^2	.1360	.1738	.1859	.1414	.1480	.1686	.2034	.3951	.2010	.3116

*Coefficient at least twice its standard error.

TABLE 4.3
(continued)

Predetermined Variables	(11) COLCUR	(12) COLCUR	(13) COURSE	(14) COURSE	(15) COURSE	(16) COURSE
FAOCC	.088*	.087*	.094*	.090*	.065	.065
FAED	.023	.010	.112*	.037	.035	.024
MOMED	.071	.061	.001	-.002	-.018	-.026
PARINC	.046	.033	-.054	-.044	-.050	-.061
ACQUIS	.087*	.088*	.164*	.088	.041	.042
"SES"	.228	.205	.267	.152	.091	.086
WEST	-.079*	-.083*	-.175*	-.167*	-.156*	-.160*
CATHOL	.078*	.075*	-.129*	-.083*	-.050	-.053
JEWISH	.047	.043	.085*	.050	.030	.028
ABL	.329*	.306*		.393*	.367*	.348*
PEER	.119*	.071			.125*	.085*
PARENT	.163*	.115*			.127*	.087*
EDEXP		.164*				.134*
R^2	.3568	.3731	.1398	.2730	.3086	.3199

*Coefficient at least twice its standard error.

TABLE 4.3
(continued)

Predetermined Variables	(17) RANK	(18) RANK	(19) RANK	(20) RANK	(21) EDUC	(22) EDUC	(23) EDUC	(24) EDUC	(25) EDUC	(26) OCC
	Dependent Variables									
FAOCC	-.039	-.044	-.062	-.062	.131*	.127*	.096*	.095*	.088*	.169*
FAED	.062	-.038	-.040	-.048	.140*	.069	.071	.055	.060	.155*
MOMED	.007	.003	-.009	-.014	.051	.048	.022	.011	.007	-.023
PARINC	.051	.065	.061	.053	.017	.027	.018	.002	-.007	-.036
ACQUIS	.160*	.058	.024	.025	.168*	.096*	.045	.046	.025	.107*
"SES"	.216	.091	.082	.086	.383	.272	.189	.162	.140	.312
WEST	-.089*	-.079*	-.071*	-.074*	-.102*	-.094*	-.079*	-.084*	-.045	-.126*
CATHOL	-.135*	-.072*	-.049	-.050	-.068	-.024	.017	.014	.017	-.085*
JEWISH	.080*	.032	.018	.016	.194*	.160*	.128*	.125*	.113*	.144*
ABL		.533*	.514*	.501*		.376*	.342*	.314*	.147*	
PEER			.093*	.063			.224*	.165*	.136*	
PARENT			.088*	.059			.080*	.022	-.013	
EDEXP				.100*				.200*	.146*	
COLCUR									.147*	
COURSE									.084*	
RANK									.186*	
EDUC										
R^2	.0859	.3315	.3498	.3558	.2262	.3481	.4048	.4290	.4732	.1634

*Coefficient at least twice its standard error.

TABLE 4.3
(continued)

Predetermined Variables	Dependent Variables (27) OCC	(28) OCC	(29) OCC	(30) OCC	(31) OCC
FAOCC	.167*	.142*	.141*	.128*	.088*
FAED	.106*	.107*	.094	.094*	.067
MOMED	-.025	-.044	-.054	-.056	-.059
PARINC	-.029	-.036	-.049	-.049	-.046
ACQUIS	.057	.016	.017	-.003	-.014
"SES"	.243	.190	.176	.158	.109
WEST	-.121*	-.109*	-.114*	-.071*	-.051
CATHOL	-.054	-.022	-.025	-.020	-.028
JEWISH	.121*	.096*	.094*	.082*	.032
ABL	.260*	.234*	.211*	.067	.001
PEER		.166*	.118*	.089*	.028
PARENT		.074	.025	-.008	-.002
EDEXP			.166*	.114*	.048
COLCUR				.118*	.052
COURSE				.153*	.115*
RANK				.109*	.025
EDUC					.452*
R^2	.2219	.2560	.2726	.3205	.4254

*Coefficient at least twice its standard error.

TABLE 4.3
(continued)

Predetermined Variables	(32) EARN	(33) EARN	(34) EARN	(35) EARN	(36) EARN	(37) EARN	(38) EARN
	Dependent Variables						
FAOCC	-.015	-.015	-.023	-.023	-.017	-.023	-.032
FAED	-.017	-.013	-.016	-.009	-.008	-.012	-.020
MOMED	.098*	.098*	.096*	.101*	.110*	.110*	.116*
PARINC	.108*	.108*	.107*	.114*	.121*	.122*	.127*
ACQUIS	.126*	.130*	.108*	.107*	.112*	.110*	.111*
"SES"	.244	.250	.223	.236	.255	.249	.252
WEST	-.093*	-.093*	-.090*	-.088*	-.079	-.076	-.070
CATHOL	.079	.076	.088*	.089*	.104*	.103*	.106*
JEWISH	.156*	.158*	.156*	.157*	.159*	.151*	.147*
ABL		-.022	-.030	-.017	-.039	-.049	-.049
PEER			.005	.032	.029	.019	.016
PARENT			.091*	.118*	.120*	.121*	.121*
EDEXP				-.091	-.091	-.101	-.107
COLCUR					-.109*	-.119*	-.125*
COURSE					.097*	.090*	.078*
RANK					.042	.029	.027
EDUC						.070	.021
OCC							.108*
R^2	.1000	.1004	.1078	.1128	.1229	.1254	.1321

*Coefficient is at least twice its standard error.

TABLE 4.4

Trimmed School Process Model of Education, Occupation, and Earnings of EEO Males (N=576), Metric Coefficients

Predetermined Variables	(1) ABL	(2) PEER	(3) PEER	(4) PARENT	(5) PARENT	(6) EDEXP	(7) EDEXP	(8) EDEXP	(9) COLCUR	(10) COLCUR
	Dependent Variables									
FAOCC	.0018	.0083*	.0082*	.0026	.0026	.0025	.0024	.0002	.0027*	.0026*
FAED	.2082*	-.0046	-.0103	.0109	.0078	.0280*	.0194	.0181	.0129	.0037
MOMED	.0094	.0571*	.0567*	.0054	.0052	.0262*	.0259*	.0154	.0145	.0143*
PARINC	.0000	.0000	.0000	.0000	.0000	.0000	.0000*	.0000*	.0000	.0000
ACQUIS	.8746*	.3059*	.2644*	.1915*	.1786*	.1336*	.0973*	-.0071	.1194*	.0804*
WEST	-.2118	-.2734	-.2634	-.0425	-.0394	-.0042	.0046	.0587	-.1285*	-.1191*
CATHOL	-1.326*	-.7236*	-.6607*	-.2347*	-.2151*	-.1942*	-.1392	.0384	.0007	.0598
JEWISH	2.000*	1.329*	1.235*	.0999	.0704	.3692*	.2863	.0739	.2721*	.1831
ABL			.0474*		.0148*		.0415*	.0290*		.0445*
PEER								.1515*		
PARENT								.3606*		
EDEXP										

*Coefficient is at least twice its standard error.

TABLE 4.4
(continued)

Predetermined Variables	(11) COLCUR	(12) COLCUR	(13) COURSE	(14) COURSE	(15) COURSE	(16) COURSE
	Dependent Variables					
FAOCC	.0020*	.0020*	.0180*	.0173*	.0126	.0124
FAED	.0031	.0013	.1279*	.0428	.0400	.0276
MOMED	.0116	.0101	.0018	-.0021	-.0246	-.0352
PARINC	.0000	.0000	-.0000	-.0000	-.0000	-.0000
ACQUIS	.0491*	.0498*	.7773*	.4198	.1929	.1978
WEST	-.1046*	-.1104*	-1.933*	-1.845*	-1.730*	-1.770*
CATHOL	.1102*	.1064*	-1.520*	-.9783*	-.5939	-.6204
JEWISH	.1289	.1216	1.967*	1.149	.6931	.6421
ABL	.0410*	.0381*		.4088*	.3817*	.3618*
PEER	.0370*	.0221			.3246*	.2203*
PARENT	.1207*	.0851*			.7901*	.5417*
EDEXP		.0986*				.6890*

*Coefficient at least twice its standard error.

TABLE 4.4
(continued)

Predetermined Variables	Dependent Variables									
	(17) RANK	(18) RANK	(19) RANK	(20) RANK	(21) EDUC	(22) EDUC	(23) EDUC	(24) EDUC	(25) EDUC	(26) OCC
FAOCC	-.0024	-.0027	-.0038	-.0039	.0160*	.0155*	.0117*	.0115*	.0107*	.1875*
FAED	.0232	-.0141	-.0147	-.0177	.1014*	.0499	.0512	.0397	.0436	1.025*
MOMED	.0032	.0015	-.0039	-.0064	.0440	.0417	.0192	.0094	.0056	-.1831
PARINC	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	-.0000	-.0002
ACQUIS	.2456*	.0889	.0368	.0379	.5042*	.2879*	.1340	.1386	.0756	2.916*
WEST	-.3191*	-.2811*	-.2537*	-.2632*	-.7137*	-.6613*	-.5519*	-.5892*	-.3133	-8.044*
CATHOL	.5133*	-.2757*	-.1863	-.1925	-.5098	-.1818	.1296	.1052	.1258	-5.768*
JEWISH	.6013*	.2431	.1347	.1227	2.847*	2.353*	1.875*	1.828*	1.655*	19.241*
ABL		.1792*	.1728*	.1682*		.2473*	.2252*	.2068*	.0966*	
PEER			.0777*	.0531			.3685*	.2721*	.2239*	
PARENT			.1772*	.1188			.3158*	.0863	-.0520	
EDEXP				.1620*				.6364*	.4641*	
COLCUR									.7759*	
COURSE									.0533*	
RANK									.3645*	
EDUC										

*Coefficient at least twice its standard error.

TABLE 4.4
(continued)

Predetermined Variables	(27) OCC	(28) OCC	(29) OCC	(30) OCC	(31) OCC
	Dependent Variables				
FAOCC	.1847*	.1576*	.1565*	.1416*	.0976*
FAED	.7007*	.7060*	.6191	.6217*	.4423
MOMED	-.1977	-.3524	-.4262	-.4402	-.4638
PARINC	-.0001	-.0002	-.0002	-.0002	-.0002
ACQUIS	1.552	.4255	.4597	-.0720	-.3827
WEST	-7.714*	-6.956*	-7.237*	-4.534*	-3.246
CATHOL	-3.670	-1.492	-1.676	-1.359	-1.876
JEWISH	16.123*	12.867*	12.513*	11.015*	4.211
ABL	1.559*	1.403*	1.264*	.4003	.0030
PEER		2.487*	1.760*	1.337*	.4166
PARENT		2.626	.8965	-.2971	-.0838
EDEXP			4.797*	3.313*	1.404
COLCUR				5.688*	2.498
COURSE				.8826*	.6640*
RANK				1.947*	.4487
EDUC					4.111*

*Coefficient at least twice its standard error.

TABLE 4.4
(continued)

Predetermined Variables	(32) EARN	(33) EARN	(34) EARN	(35) EARN	(36) EARN	(37) EARN	(38) EARN
			Dependent Variables				
FAOCC	-3.	-3.	-6.	-5.	-4.	-5.	-7.
FAED	-23.	-17.	-22.	-12.	-11.	-17.	-27.
MOMED	160.*	160.*	155.*	164.*	180.*	179.*	189.*
PARINC	.0945*	.0940*	.0930*	.0993*	.1056*	.1063*	.1103*
ACQUIS	705.*	728.*	605.*	601.*	626.*	616.*	624.*
WEST	-1211.*	-1216.*	-1186.*	-1154.*	-1030.	-989.	-917.
CATHOL	1100.	1065.	1220.*	1241.*	1456.*	1439.*	1481.*
JEWISH	4285.*	4338.*	4271.*	4311.*	4350.*	4133.*	4040.*
ABL		-26.	-37.	-22.	-48.	-60.	-60.
PEER			16.	98.	89.	60.	50.
PARENT			670.*	866.*	877.*	884.*	886.*
EDEXP				-544.	-542.	-602.	-633.
COLCUR					-1074.*	-1176.*	-1231.*
COURSE					114.*	108.*	92.*
RANK					155.	107.	98.
EDUC						131.	40.
OCC							22.*

*Coefficient is at least twice its standard error.

on enrollment in a college track. This residual "SES" effect does not, however, necessarily reflect direct social class discrimination in curriculum sorting. Academic performance, for example, is not controlled in this model. When controls are added for tenth grade class rank the direct SES effect is reduced considerably, but does not disappear (see Alexander and Eckland, 1973, 1974). Unmeasured factors, such as early achievement orientations or class-room behaviors, may also influence tracking decisions.

Only 15 percent of the total ability effect on tracking is "explained" by the intervening motivational and interpersonal support variables (compare columns 10 and 12). The structural equation for COLCUR (column 12) suggests that ability is the most influential determinant of tracking, followed by SES, and then PARENT, EDEXP, WEST, and CATHOL. The significant direct EDEXP and PARENT effects suggest that students, net of their status origins and ability, may indeed act on their own college plans and the expectations of parents by enrolling in a college preparatory curriculum. An alternative explanation -- akin to the interpretation proffered by Kerckhoff (1976) -- is that school personnel make such sorting and selection decisions based on students' motivations and parental input. The data do not allow me to distinguish between these alternative explanations, one of which stresses individual decision-making and the other the role of selection and allocation mechanisms.

Column 12 contains one final interesting effect which remains to be discussed. Controlling only for SES and ability, there is no effect on tracking of a Catholic background. When I introduce controls for the influence of parents and peers, however, Catholic men are somewhat more likely than Protestant students of equal status and ability to be enrolled in a college preparatory curriculum (compare columns 10 and 11). Hence, Catholic students who receive encouragement from significant others do enjoy some "tracking" advantages.

Three indicators of status origins, i.e.; father's occupation, father's education, and possessions, and religious background significantly influence total number of science and mathematics courses taken in high school (column 13). However, ability (column 14) registers by far the strongest effect on COURSE, an effect which is not appreciably reduced by the addition of parental and peer supports (column 15) and educational expectations (column

16).

Ability not only doubles the explained variance over that attributable to social background (to 27 percent), but it also mediates around 40 percent of total effects of SES, CATHOL, and JEWISH. Jewish men take, on the average, two science and math courses more than equal status Protestant men, but after controlling for ability this "advantage" is effectively zero (compare columns 13 and 14).

Interpersonal encouragements from both parents and peers modestly, but significantly, enhance this type of coursework (column 15). Moreover, the disadvantage suffered by men from Catholic homes virtually disappears after controlling for these social-psychological supports (compare columns 14 and 15). Hence, the liability associated with a Catholic background is mainly due to the lower measured aptitude and relative lack of social- psychological resources of these students. The final variable to be considered in the determination of coursework is educational expectations (column 16). This dimension of ambition does stimulate the completion of science and mathematics courses and mediates about a third of the influence of PARENT and PEER. The structural equation for COURSE explains about 32 percent of the variance in this dimension of academic experience (column 16).

The processes determining COLCUR and COURSE are similar in many respects: the pronounced importance of ability, the extent to which students behaviorally "act" on the perceived support of significant others and their own college plans, and the depressant effect of living in the West in 1955. One notable difference does exist between these processes, however, and this concerns the role of status origins. As I noted above, SES registers reasonably strong unmediated direct effects on college tracking, even net of four intervening school process variables, while, for COURSE, the structural estimate of status origins is trivial. The intervening ability and social-psychological variables mediate over two-thirds of the total status origins effect on COURSE, but only one-third of these effects on COLCUR. Thus, while lower SES students are handicapped with respect to overt tracking, they are not significantly less likely than are high SES adolescents to take important coursework.

The final academic experience to be considered here, class rank, differs from college tracking and coursework in that it represents an evaluation of a student's performance (rather than indexing exposure to certain skills or attitudes, as do COLCUR and COURSE). Academic ability is seen to be the most important determinant of performance and, net of ability, status origins registers unimportant influences. Ability not only mediates almost 60 percent of the total SES effect, but also transmits most of the salutary effect of a Jewish background and about half of the depressant effect of a Catholic background (compare columns 17 and 18). Most (96 percent) of the effect of ability, however, is direct; that is, unmediated by the intervening social-psychological variables, even though these encouragement or support variables do themselves stimulate 12th grade performance (see columns 19 and 20). Net of ability, however, no single other variable is very important in determining class rank.

Education

In Chapter 2 I discussed in detail the importance of social background and ability influences for educational attainment. In this section I attempt to uncover those social-psychological and schooling mechanisms which maintain the linkage between background and years of schooling completed. I consider first the role of significant others' influence. Column 23 indicates that, net of background and ability, a hypothetical shift of one unit in either perceived peer plans or perceived parental encouragement is worth about a third of a year's schooling each (Table 4.4). These results provide further support both for Sewell's general assumptions about the importance of significant others and for the crucial role of peer networks and friendship structures in the educational achievement process (Coleman, 1961; McDill and Coleman, 1965). Peer and parental influences do more than directly stimulate attainment, however. Roughly 30 percent of the effect of status origins, as assessed in column 22 (net of ability), is due to the linkage between SES and these interpersonal resources. Twenty percent of the salutary effect of a Jewish background is also mediated in this manner.

Educational expectations also directly enhance schooling attained and mediate background influences. A hypothetical shift in college plans from "non-college" to "possibly college," for example, ultimately results in two-thirds of a year's gain in the number of years of schooling completed (column 24 - Table 4.4). This dimension of goal orientation is about as important as peer plans. Additionally, college plans reduce the direct influence of status origins (by 14 percent) and explain most of the parental encouragement effect; however, they mediate little of the effect of ability or religious or geographic background (compare columns 23 and 24).

The academic experience variables -- college tracking, science and mathematics courses, and senior class standing -- all modestly promote high educational attainment. Net of all other variables in the model, enrollment in a college track results in three-fourths of a year's education, while one semester of math or science coursework is worth .05 of a year of schooling. An "average" student in this respect ($\overline{X}$=7.7), compared to a student with no formal coursework in either mathematics or science, would obtain almost a half-year more schooling.

Performing well in school, even independent of the specific track or courses taken, also promotes educational attainment. A shift upward of one quintile in senior year class standing yields an additional third of a year of education. Movement from the first to fifth quintile, therefore, results in an increase of more than 1.3 years (or half of a standard deviation) of schooling completed (Table 4.4).

Occupation

Occupational status appears sensitive to many of the variables introduced in this chapter. Only parental encouragement for college attendance fails to register a statistically significant total effect. The effects of most of the variables, however, are mediated by intervening variables, especially education.

The results for COURSE, on the other hand, are somewhat different. The reduced-form estimate for COURSE suggests that each semester of math or science coursework is worth 0.9 of a status point. Only 25 percent of this effect is mediated by education (compared to 56 and 77 percent for COLCUR and RANK, respectively), so that the structural estimate of COURSE is 0.66 status points (column 31). This implies that, net of all of the variables in the model, a student with an average number of semesters of such coursework ($\overline{X}$=7.7) obtains employment in occupations averaging 5 status points higher than a student with no such coursework. This is slightly higher than the status returns to one year's schooling. It is likely that this variable is tapping occupationally relevant skills rather than certification because an employer is unlikely to see a high school transcript and, therefore, is not likely to reward the job incumbent for simply having taken certain courses. In a sense, then, the human capital interpretation (Mincer, 1970, 1974; Malkiel and Malkiel, 1974) of the impact of schooling on occupational careers is supported. Certain experiences generally occurring only in schools do, then, appear to enhance skills which are rewarded by employers.

As was the case for education, the social-psychological and schooling variables explain, to a considerable degree, why men from high status backgrounds tend to occupy higher status positions in the occupational hierarchy. Fifty percent of the total influence of status origins is transmitted by ability and the schooling variables, and another 16 percent is mediated by educational attainment. As evaluated in the structural equation (column 31), of all of the social background variables, only father's occupation exerts a statistically significant direct effect on status outcomes.

The impact of ability, too, is rather effectively "explained" by these variables, especially the three academic experiences (compare columns 27 and 30). Seventy-three percent of the effect of ability is exhausted even before controlling for education, with the social-psychological influences (PEER, PARENT, EDEXP) accounting for 19 percent and academic experiences (COLCUR, COURSE, RANK) for another 54 percent of this effect. Highly able students achieve greater occupational status (1.6 points per unit of ability) primarily because of specific academic experiences and achievements and, also, because of the greater education they receive.

Perhaps the most dramatic finding is the role of education in positioning young men in the occupational status hierarchy. Educational attainment "uniquely" explains 10 percent of the variance in occupational status, and registers, by far, the strongest relative influence on this dimension of labor market success. Additionally, education mediates a sizeable proportion of the explanatory power of most other variables. The advantage of a Jewish background, as well as the disadvantage of living in the West, is primarily a function of the educational attainments of such men. Father's education, peer influences, educational expectations, college tracking, and class rank all have a salutary impact on occupational status mainly because of their efficacy in increasing the number of years of schooling completed.

Moreover, the education effect on status is quite robust. The bivariate slope of occupation on education is 5.6, while the structural estimate is 4.1. Controlling for 16 other variables, therefore, reduces the relationship by only 27 percent, this in spite of the sensitivity of educational attainment to these same 16 variables. One interpretation of this finding is that if an individual were handicapped with respect to social background, ability, social-psychological supports and motivations, academic performance, and utilization of important school resources but exogenously managed to acquire educational certification (recall that 50 percent of the variance in educational attainment is unexplained by these variables), his occupational status attainment would not be notably lower than that of a comparably educated man who also happened to have advantaged statuses on all background and schooling variables.

Earnings

These same social-psychological and schooling variables generally have little impact on earnings. Only parental concern for the student's college education and scientific and mathematics coursework enhance earnings at age 30. An increment of parental support is worth, on the average, $670, net of social background, ability, and peer influences (column 34). Controlling for the remaining intervening variables, especially educational expectations and college track, simply functions to increase this parental effect, so that the structural estimate for PARENT is $886 (column 38). This is an unexpected finding, and one for which there is no substantively satisfying interpretation. Sewell and Hauser (1972, 1975), using a model quite similar to the one estimated here, report that parental encouragement has no direct impact on earnings. I can offer, however, several post-hoc explanations for this effect. First, it will be recalled that the PARENT measure is based on students' reports, which were ascertained in 1955, of parental concern about college. Individuals perceiving such encouragement may actually have earnings-related achievement orientations not tapped by any other variables in the model, including educational and occupational aspirations. A related interpretation is that parents concerned for the future educational, occupational, and economic successes of their male offspring, and who communicate that concern to their children, may socialize their children to achieve. Here, then, the unmeasured process is one of socialization. Further research is needed to test the generality of this finding and to uncover the mechanisms producing this effect.

Interpretations of the coursework effect are less ambiguous. The reduced-form COURSE coefficient (column 36) indicates that each semester of math or science is worth, on the average, \$114 annually. Only 19 percent of this total effect is a function of the intervening educational (5 percent) and occupational (14 percent) achievements. The overwhelming bulk of this effect, then, is due to neither higher education nor higher occupational status, but rather to the direct, unmediated earnings-enhancing influence of COURSE. Even for men of the same background, ability, and educational and occupational achievements, each semester of science or mathematics courses yields \$92 annually, at age 30. A student with an average number of courses or semesters ($\overline{X}$=7.7) thus would earn about \$700 more per year than a student with identical scores on all other variables but with no such coursework. I note, as a further way of demonstrating the salutary impact of this dimension of academic experience, that compared to a student with no such training, one with 4 years of coursework in both mathematics and science, or 16 semesters, would earn almost \$1500 annually more. These results are consistent with those obtained for education and occupation and suggest the utility of studying within-school variables, especially those tapping skill-producing processes, as possible determinants of adult socioeconomic achievement.

Before leaving discussion of these schooling variables, I should note two anomalous, possibly artifactual, findings -- the net negative influences of educational expectations and college tracking. Neither of the results was hypothesized, nor are they theoretically reasonable. I know of no reason why either should directly depress earnings. Sewell and Hauser (1972, 1975), in examining the role of college plans in adult achievement processes, found essentially no net relationship between plans and earnings. Nor did we with a slightly different model estimated for EEO men from non-farm origin (Alexander, Eckland, and Griffin, 1975). Moreover, these particular findings are very sensitive to the subsample selected for analysis and the sample size (see, for example, Table 4.2). I view these results as artifactual, therefore, because of their instability and lack of theoretical and past empirical support.

Inclusion of the social-psychological and academic experience variables does little to change the estimates of the social background variables. The reduced-form and structural estimates of these variables, as well as those of a Jewish background, are roughly the same, indicating that the adolescent developmental variables considered here mediate almost none of these background effects. Hence, men from particular backgrounds earn more or less as young adults regardless of what happens to them in schools. The depressant effect of living in the West in 1955 is due, in large part, to a relative paucity of academic experiences (especially courses) which ultimately enhance earnings (compare columns 32 and 36, and see columns 11, 14, and 17). Although the school process variables do not "interpret" the advantages of a Catholic background, they do specify what mechanisms are necessary for men from such homes to earn more than their Protestant peers. In Chapter 3, I noted that only when the educational attainments of men from different religious backgrounds are statistically equated do Catholic men earn more. At that time, I suggested that the educational attainment deficits of Catholic men mask the earnings advantage associated with such an upbringing. However, as columns 32-38 indicate, it is not the lack of years of schooling per se which depresses the earnings of Catholic men, but the lack of intervening social-psychological resources. When Catholic and Protestant men of equal status and ability are statistically equated on significant others' influences, Catholic men earn significantly more than do Protestant men (compare columns 32 and 34). Further controls for all other subsequent variables simply increase the earnings "advantage" of Catholics because they are also disadvantaged on these variables (except college tracking).

4.4 Conclusions

Consideration of schooling mechanisms and social-psychological influences did, in general, increase our understanding of why men from high status or Jewish families acquire more education and greater occupational status. Those adolescent or schooling variables which influenced achievement were generally correlated with social background and, therefore, functioned as mediating variables.

Earnings attainments, however, were largely insensitive to most schooling experiences, though science and math courses taken in high school did enhance economic success. Moreover, school processes do not appear to explain why parental income directly affects earnings. More complete knowledge of the processes governing the distribution of economic success, or an understanding of the inheritance of earnings potential requires attention to mechanisms other than those associated with formal schooling. It is to these issues to which I now turn.

FOOTNOTES

1. Significant others' influence is the subject of many other research reports. Among the most notable are Williams (1972, 1975); Hauser (1972); Kerckhoff (1974); McDill and Coleman (1965), and Hout and Morgan (1975). In most of this work, significant others' influence is treated both as an outcome and as a determinant of subsequent educational performance.

2. Kerckhoff (1976) has recently suggested, however, that educational or occupational aspirations do not tap "ambition" but rather "knowledge of the real world." Hence aspirations, according to Kerckhoff, do not serve as motivations. Some support for the notion that more career-wise adolescents ultimately achieve at higher levels may be found in Parnes and Kohen (1975).

3. It could be argued that vocational training while in high school should be especially efficacious in the later careers of men who lack educational certification. Accordingly, I estimated equations 4.1-4.3 for "non-college goers" only. The results suggest that such tracking has no influence on occupational status but does

modestly enhance earnings. These results, however, are based on a rather small and nonrandom subsample of the EEO men (N=131). Further research, therefore, should attempt to replicate this finding and, in general, to ascertain if achievement processes differ substantively for differentially certified men. Originally constrained by a relatively small number of usable cases, I was not able to conduct parallel analyses for "college goers" and "non-college goers."

4. While a variety of alternative model specifications of these and similar variables have been proposed by, among others, Duncan, Haller, and Portes (1968), Hout and Morgan (1975), Porter (1974, 1976), and Kerckhoff (1974), Sewell's specifications are, perhaps, the most widely accepted.

5. When references are made in this discussion to either standardized coefficients or coefficients of determination, the appropriate table to consult is Table 4.3. For the presentation of metric coefficients, see Table 4.4.

Chapter 5

POST-SCHOOLING TRAINING AND ACHIEVEMENT

5.1 Introduction

While the original Blau-Duncan (1967) socioeconomic life-cycle model has provided considerable insight into the processes governing occupational status attainment, its recent extensions to economic market attainments, especially earnings and income, have been far less informative. Although such models have successfully specified the impact of a number of background and schooling influences on economic success, their overall explanatory power has been minimal, as the results presented in Chapter 4 demonstrated (see also results presented by Spaeth, 1976a; Sewell and Hauser, 1972, 1975; Bowles, 1972; Alexander, Eckland, and Griffin, 1975; Duncan, Featherman, and Duncan, 1972; Jencks, et al., 1972; Featherman, 1972; Otto, 1976). The inability of traditional "status attainment" variables (i.e.; social origins, ability, schooling, and occupational status) to account for substantial variance in adult earnings has lead some researchers (e.g.; Jencks, et al., 1972) to the incautious conclusion that "luck" or "chance" plays a major, perhaps predominant, role in the distribution of economic resources. Undoubtedly, random disturbances do function to partially allocate income or earnings among employed adults, especially for men early in their socioeconomic careers (see Mincer, 1974). However, it is likely that at least some of the residual earnings variance now subsumed under the unsatisfactory term "luck" is, in fact, due to systematic differences in non-schooling, labor market experiences (Mincer, 1974; Stolzenberg, 1975; Suter and Miller, 1973; Malkiel and Malkiel, 1974; Haworth, Gwartney, and Haworth, 1975; see also the review in Psacharopoulos, 1974), which thus far have been generally neglected in sociological research on personal income inequality (see, however, Treiman and Terrell, 1975; Featherman and Hauser, 1976).

Thus, socioeconomic achievement models of labor market success might profitably incorporate as explanatory variables such non-schooling "human capital investments" as vocational training and firm experience and other types of work experience. Such an assessment of the pecuniary consequences of work experiences might provide further insight into the economic importance of schooling, since labor supply and various dimensions of labor force experience are themselves known to be affected by educational attainments (Link and Ratledge, 1975; Featherman and Hauser, 1976; Stolzenberg, 1975; Mincer, 1974). And, as several studies have shown (e.g.; Mincer and Polachek, 1974; Polachek, 1975; Treiman and Terrell, 1975; Featherman and Hauser, 1976; Suter and Miller, 1973; Blinder, 1976), consideration of labor force participation and experiences is absolutely necessary if sexual inequalities in socioeconomic achievement are to be even partly understood. Let me now turn to the pertinent theoretical and methodological issues.

5.2 Models Linking Education, Experience, and Earnings

Length of work experience is hypothesized to positively affect earnings for several reasons. Human capital economists, for example, view the returns to experience as returns to either on-the-job training or productive skills (Mincer, 1962, 1970, 1974; Malkiel and Malkiel, 1974). This interpretation parallels the "productivity," explanation of the education-earnings linkage. Dual labor market theorists, on the other hand, explain the economic advantages associated with increased labor market experiences as reflections of productivity differences and the institutionalized traditions of internal (within-firm) labor markets, whereby workers with training, seniority, and relatively more experience are paid more regardless of their productivity (Gordon, 1972a;Piore, 1973;Doeringer and Piore, 1971). Finally, the organizational socialization literature (Moore, 1969; Denhardt, 1968; Hall and Schneider, 1972) suggests that increased work experience is positively associated with the development of certain "desirable" attitudes, such as organizational commitment, loyalty, and an orientation toward firm rules and policies, which may themselves be rewarded. This last interpretation is consistent with the thesis propounded by some Marxist economists concerning the positive effect of noncognitive attitudinal traits, especially those tapping such personality dimensions as subservience and docility, on wages and earnings (Edwards, 1976; Gintis, 1971; Bowles and Gintis, 1976).

In the above discussions, I implicitly treated labor force experience as a homogeneous resource, albeit one subject to alternative measurement strategies. Becker (1964), however, in his formulation of human capital theory, argues that "experience" is not homogeneous; rather, it is assumed to represent two distinct types of vocational training, general and specific. General training is hypothesized by Becker to be useful in a variety of jobs or firms, while the value of specific training is assumed to be firm specific, i.e.; productivity-enhancing only in those firms providing such training. Gordon (1972a), arguing from a dual-market or perhaps radical perspective, also stresses the importance of the differences between general and specific work experience.

Both schools of thought -- human capital theory and dual labor market theory -- imply, then, that economic benefits of different types of experience may differ, depending on the perceptions of employers as to which sort of experience is more "useful" or on company policies, among other things. Although the pertinent research is hardly definitive, there is some evidence which supports this distinction (A. Alexander, 1970; Spacth, 1976a; Flanagan, 1974). Based on theoretical and empirical considerations, then, I argue that length of experience on current job, which indexes both specific and general training, is conceptually distinct from length of other market experience, which may be considered general training or preparation, and should be so treated empirically.

The human capital earnings model, as developed by Mincer (1974: 84), assumes that during schooling no productive (i.e.; earnings-enhancing) time is spent in the labor force. This assumption is reflected in the procedures typically used to estimate length of labor market experience from age, years of schooling completed, and probable age of entry into school. These techniques consistently neglect experience accrued during the formal schooling process. Although Mincer provides no explicit rationale for this assumption, one could perhaps argue that individuals both employed and in school are either working part-time or working in jobs for which they feel no long-term commitment and which they are attempting to leave (via schooling). Should these circumstances hold generally, then labor market experience accrued during schooling may, in fact, be less useful in later occupational careers of individuals; in the terminology of human capital theory, such experience would not increase a worker's stock of human capital (i.e.; skills). I should note, though, that this assumption has not been empirically tested, despite the apparent frequency and duration of such experience (see discussion below). If such experience is indeed unrewarded, it must be analytically and empirically distinguished from work experience gained after termination of formal schooling. If it were not, the estimated returns to each year of experience would be biased toward zero by virtue of combining experience which is economically useful (i.e.; that acquired after schooling) with experience that may yield no economic benefits (i.e.; that acquired during school).

I conclude, then, that length of work experience should most properly be decomposed into at least three components: experience accrued during the formal schooling process; experience gained after termination of academic education but before entry into present job; and post-schooling experience on current job.

Despite the weight of theory and research, most empirical applications of human capital theory, presumably due to a paucity of data, have ignored these distinctions between different kinds of work experience (Stolzenberg, 1975; Mincer, 1974; Polachek, 1975; Link and Ratledge, 1975; Johnson and Stafford, 1973; Featherman and Hauser, 1976; Treiman and Terrell, 1975). The consequences of this often necessary practice have yet to be fully explored.

A second problem with estimating the eoconomic benefits of labor force participation is one of operationalization. In the absence of direct data on length of work experience, which is generally true for most data sets, researchers must estimate it, usually from information on current age and years of schooling. Commonly the estimate is age minus schooling minus some constant representing likely age of school entry -- 5, 6, or 7 years (Stolzenberg, 1975; Polachek, 1975; Mincer, 1974; Link and Ratledge, 1975; Johnson and Stafford, 1973; Young and Jameson, 1975; Featherman and Hauser, 1976), but it may also be age minus age at leaving school (Welch, 1973a), or more complex functions of age and schooling (Griliches and Mason, 1973). It is assumed, with some supporting evidence (Malkiel and Malkiel, 1974), that such proxies are reasonably accurate for workers with continuous employment histories (prime age white males, for example). Even for such "ideal" populations, however, seemingly minor differences in procedures for estimating length of work experience yield quite different estimates of the earnings returns to experience and to the quantity and quality of schooling (Link and Ratledge, 1975). Despite the obvious deficiencies of these procedures, it is not uncommon to encounter even cruder proxies for experience, such as unadjusted age, in earnings functions (G. Duncan, 1974; Osterman, 1975; Haworth, Gwartney, and Haworth, 1975;

Blinder, 1973; Harrison, 1972; Weiss, 1970; Masters, 1974; Mincer, 1962; Rees and Schultz, 1970). Use of this proxy is based on the loose correlation between age and length of labor force experience. As Rosenzweig and Morgan (1976) observe, however, workers of the same age but with differing levels of educational attainment, frequency and duration of unemployment, and years of military service will differ in "true" levels of work experience. They contend that such differences may be quite consequential for the estimation of economic returns to experience (see the exchange between Rosenzweig and Morgan (1976), Blinder (1976), and Rosenzweig (1976)). Even when the length of work experience is assessed directly (e.g.; Ashenfelter and Mooney, 1968; Suter and Miller, 1973; Malkiel and Malkiel, 1974), conceptual and measurement difficulties often remain. How much experience, for example, should be credited for part-time employment or for work in seasonal occupations, such as construction (see also the discussions in Suter and Miller, 1973 and Malkiel and Malkiel, 1974)? The second problem, therefore, is one of measurement error, the general consequences of which are well known and need not be recounted here (see Duncan, 1975; Stanley, 1971; Siegel and Hodge, 1968).

The timing and sequencing of schooling and employment, a topic of increasing research interest (e.g.; Featherman and Carter, 1976; Karweit, 1976a; Hogan, 1975; Elder, 1975; Winsborough, 1975; Ornstein, 1971; Eckland, 1964) also may obscure interpretation of the experience-earnings relationship. A common, almost unquestioned, assumption of the socioeconomic achievement or income models employed by sociologists and economists is that individuals first complete their schooling and then enter the labor market (see, for example, Blau and Duncan, 1967; Bowles, 1972; Mincer, 1974; Sewell and Hauser, 1975; Jencks, et al., 1972). Indeed, so strong is the presumption that Elder (1975) has identified this straight-forward progression from school to work as a "normative" feature of life-cycle career development. This assumed sequencing of events, however, is an oversimplification for a sizeable percentage of American workers. Karweit (1976a), for example, reports that 57.3 percent of the white males included in the Coleman-Rossi "Retrospective Life History Survey (RLHS)" resumed schooling in some form after entry into the labor force (for further analyses of these data, see Coleman, et al., 1972; Ornstein, 1971). In an analysis of the 1973 Occupational Changes in a Generation (OCG-II) data, Hogan (1975) found that for the cohort most similar in age to the men analyzed here, i.e.; that born in 1937-1941, 14.5 percent reported assuming a full-time, first job before completion of school (see also Winsborough's 1975 analysis of the 1973 OCG-II data). A similar percentage (12.5%) was observed for the 1962 OCG sample (Blau and Duncan, 1967; Duncan, Featherman, and Duncan, 1972).

Although interpretation of the EEO data is complicated by the inability to distinguish part-time from full-time schooling and work, the timing of the career events of the EEO men appears generally consistent with those of the RLHS and OCG men. For men to be analyzed in this thesis, 84.5% were simultaneously engaged in academic schooling and in employment for at least one year in their career and 34.5% were so occupied for five or more years ($\overline{X}$ = 4.2 years). Moreover, after initially "terminating" their academic education and entering the labor force, 20 percent of these men subsequently returned to high school or college; for those who did return to academic pursuits, the mean number of years enrolled in school was 3.5 years. These findings, together with those reported by other researchers, strongly suggest that many individuals deviate from the "normative" pattern of school to work. For this segment of the population, therefore, treating education as causally prior to length of total work experience slights the complexity of the observed temporal processes.

The three problems, while theoretically distinct, often are interrelated in empirical research. If length of work experience must be estimated from other data or variables, the measurement (or operationalization) problem obviously is present. And in the absence of other data (e.g.; on firm experience), the question of conceptualization is unfortunately settled by fiat; the researcher, constrained by the data, must employ an undifferentiated measure of experience. Finally, the use of only an index of total labor force experience is not only conceptually inappropriate but may lead to a misspecification of the school-employment relationship as well.

Issues in the conceptualization, operationalization, and specification of work experience also have important ramifications for assessments of the economic utility of educational attainment. In the absence of extremely irregular work histories, there is an inherent negative correlation between years of schooling completed and years of post-schooling labor market experience. In these data, for example, educational attainment correlates at -.324 with experience accrued after the termination of formal schooling but before entry into present job and -.433 with post-schooling present job experience.[1] Individuals have a finite "work" life, and these years can be spent only in school or in post-schooling activity, generally in the labor market (at least for the population under consideration here, i.e.; relatively highly educated white men). Hence, a trade-off exists between years of schooling and years of post-schooling work activity, especially in data such as these which exhibit a great deal of age homogeneity.

This observation has an extremely important implication: educational attainment indirectly depresses earnings by reducing economically valuable labor market experience.[2] In order to estimate unbiased earnings returns to educational attainment, experience differentials must be controlled.

Evidence presented by Flanagan (1974) and Leigh (1976) suggests that work experience, while perhaps indexing such unobservable variables as on-the-job training, does not exhaust the range of potentially effective training mechanisms. In Chapter 1, I noted that the EEO men identified quite diverse sources of vocational preparation. Preliminary regression analyses indicated that of the seven training sources, which include high school, college, technical or vocational school, military service, apprenticeship, on-the-job training, and company training program, only the last three notably influenced earnings. Following Flanagan (1974), I sum these three separate components of training into a single index of on-the-job training to be included, along with the three components of work experience, in the social-psychological model discussed in Chapter 4. As I noted in Chapter 1, analyses of the determinants of supply and other post-schooling "investments" in human capital are especially timely since almost no studies exist on this important topic (e.g.; Mincer, 1974; Spaeth, 1976b).

5.3 Labor Supply

The dependent variable in all of my analyses is annual earnings, which, in a strict sense, is not a measure of pure economic success since it confounds wage rates with the amount of time worked annually. Mincer (1974) and Featherman and Hauser (1976) among others (e.g.; Heckman and Polachek, 1974), has shown that labor supply influences annual earnings. Not surprisingly, at constant wage rates, the more hours worked by job incumbents, the greater the annual earnings. Moreover, Blinder (1976) argues that the monetary returns to education may be overstated in the absence of controls for supply because schooling may influence both supply and wage rates. I will evaluate the degree to which labor supply (defined here as the number of hours worked per year) is responsive to a variety of antecedent variables, as well as assess the impact of supply on earnings, holding constant all other posited determinants.

5.4 The Model

These considerations, then, suggest that the following equations are appropriate representations of the processes linking social background, schooling, labor market experiences and socioeconomic achievement:

(5.1) ABL = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH);

(5.2) PEER = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL);

(5.3) PARENT = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL);

(5.4) EDEXP = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT);

(5.5) COLCUR = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP);

(5.6) COURSE = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP);

(5.7) RANK = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP);

(5.8) EDUC = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, COLCUR, COURSE, RANK);

(5.9) PRETERMEXP = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, COLCUR, COURSE, RANK);

(5.10) OTHEREXP = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, COLCUR, COURSE, RANK, EDUC, PRETERMEXP);

(5.11) ON-JOB = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, COLCUR, COURSE, RANK, EDUC, PRETERMEXP, OTHEREXP);

(5.12) FIRMEXP = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, COLCUR, COURSE, RANK, EDUC, PRETERMEXP, OTHEREXP);

(5.13) SUPPLY = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, COLCUR, COURSE, RANK, EDUC, PRETERMEXP, OTHEREXP);

(5.14) OCC = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, COLCUR, COURSE, RANK, EDUC, PRETERMEXP, OTHEREXP);

(5.15) EARN = f(FAOCC, FAED, MOMED, PARINC, ACQUIS, WEST, CATHOL. JEWISH, ABL, PEER, PARENT, EDEXP, COLCUR, COURSE, RANK, EDUC, PRETERMEXP, OTHEREXP, APPRENT, ON-JOB, COMP, FIRMEXP, SUPPLY, OCC).

where all variables, and their means and standard deviations, are presented in Table 5.1.

Once more, all predetermined variables are assumed to be perfectly measured, and are hypothesized to operate on the endogenous variables in a linear and additive manner.[3] Finally, the structural disturbances of each equation are assumed to be uncorrelated among themselves and with any predetermined variable. Given these assumptions, this system of equations is estimable by ordinary least squares regression.

My expectation is that the post-schooling experience

TABLE 5.1

Variable Descriptions, Means, and Standard Deviations of All Variables Used in Chapter 5

Variable Symbol	Variable Description	N=495	
		$\bar{X}$	σ
FAOCC	Father's occupation	40.34	21.85
FAED	Father's education	10.14	3.66
MOMED	Mother's education	10.74	3.02
PARINC	Parental income	8685	5764
ACQUIS	Material possessions	.04	.87
WEST	Lived in west in 1955	.17	.37
CATHOL	Catholic	.14	.35
JEWISH	Jewish	.03	.17
ABL	Academic ability	7.73	3.94
PEER	Peer college plans	4.99	1.60
PARENT	Parental encouragement	2.24	.66
EDEXP	Educational expectations	1.97	.82
COLCUR	Senior college track	.43	.50
COURSE	Science and math courses	7.70	4.14
RANK	Senior class standing	1.95	1.34
EDUC	Educational attainment	14.55	2.58
PRETERMEXP	Experience acquired during schooling process	5.49	4.58
OTHEREXP	Post-schooling, previous work experience	2.95	3.59
ON-JOB	Training acquired on current job	1.14	.79
FIRMEXP	Post-schooling, current job experience	4.36	3.91
SUPPLY	Annual hours worked	2411	599
OCC	Occupational status	53.33	23.70
EARN	Annual earnings	11240	4842

and training variables will clarify further the processes governing earnings attainments. And, as I noted in Chapter 1, inclusion of post-schooling "investments" in socioeconomic achievement models of the sort represented by equations 5.1-5.15, above, will identify the ways in which various social background and social-psychological mechanisms affect the acquisition of human capital itself, a topic generally neglected in human capital research (Mincer, 1974). Finally, adult labor market experiences may also help "account for" the intergenerational occupation and earnings linkages documented in Chapters 3 and 4. That is, these results will allow me to investigate the extent to which the intergenerational transmission of socioeconomic status positions is maintained through these forms of human capital investments and work experiences. Identification of the basis of this linkage, which is not implied by human capital theory and has thus far defied explanation by "social-psychological achievement" models (Chapter 4; Alexander, Eckland, and Griffin, 1975; Griffin, 1976a; Hauser, Sewell, and Alwin, 1974; Sewell and Hauser, 1972, 1975; Bowles, 1972, 1973) would substantially improve our understanding of how socioeconomic inequalities are reproduced from generation to generation.

Since the hypothesized causal structure underlying the patterns of association among the school variables has been discussed thoroughly in Chapter 4, I need only review the remaining specifications at this point. Work experience acquired during the schooling process (PRETERMEXP) combines experience acquired both while enrolled in an academic school program and during alternating periods of schooling and work. Therefore, I assume that schooling and this particular type of experience are contemporaneous and, hence, have no direct relationship to one another. Work experience accrued after the termination of formal schooling but before entry into one's current job (OTHEREXP) is assumed temporally dependent on educational attainment and work experience acquired during the schooling process. This component is definitionally prior to current job experience (FIRMEXP).

The relationships among occupational status, firm experience, training, and labor supply are causally ambiguous. Certain occupations may require on-the-job training and greater (e.g.; physician) or less (e.g.; construction) than average hours worked annually, but occupational placement may also depend on the "willingness" of job incumbents to undergo specific training and to supply more labor. The relationship between training and labor supply is equally indeterminate. The acquisition of specific training may enable a job incumbent to work more hours, while increased labor supply may result in greater "investments" in human capital. In the absence of longitudinal data on the sequencing of these events, I am forced to enter occupational status, firm experience, on-the-job training, and labor supply into the earnings equation simultaneously.

5.5 Results

Since the estimates of equations 5.1 to 5.8 are very similar to those presented in Chapter 4,for the same equations, I will present the estimates of equations 5.9 to 5.15 only. The sample size for this analysis is 495 and the estimates are presented in Table 5.2 (standardized coefficients) and Table 5.3 (metric coefficients).[4]

Experience, Training, and Supply

Labor force experience acquired during schooling (PRETERMEXP) is modestly sensitive to some of the same social and social-psychological antecedents as is educational attainment (e.g.; ACQUIS, PEER, COLCUR, COURSE, RANK). This is not surprising since years of schooling completed and this dimension of work experience are rather highly correlated (r = .581 in these data), a necessary condition of the construction of the experience variable. Background and adolescent schooling variables explain 26 percent of the variance in PRETERMEXP (column 6).

With very few exceptions, none of these same antecedents substantially influences post-schooling, previous job experience (OTHEREXP). Of the background and schooling variables considered here, only class rank (RANK) directly influences OTHEREXP (column 11). Additionally, both educational attainment and experience accrued during the schooling process delay entry into a worker's first, full-time post-schooling job. Each year of schooling and experience during schooling reduces post-schooling, non-firm experience by about a fifth of a year each. These data, then, demonstrate the modest trade-off which exists between schooling and work experience during the schooling process and post-schooling, non-current job work experience.

Of special relevance to this investigation are the results presented in column 6, which indicate that this dimension of human capital accumulation is not dependent on social background. Children from higher status families are not advantaged with respect to this type of labor force participation. Thus any earnings "payoffs" enjoyed by higher status men does not result from more work experience

TABLE 5.2

Effects of Social Background and Schooling on Labor Market Experiences and Labor Market Outcomes (N=495), Standardized Coefficients

Predetermined Variables	(1) PRETERMEXP	(2) PRETERMEXP	(3) PRETERMEXP	(4) PRETERMEXP	(5) PRETERMEXP
FAOCC	.059	.063	.039	.040	.020
FAED	.077	.034	.029	.017	.024
MOMED	.031	.036	.016	.009	-.007
PARINC	-.042	-.035	-.040	-.050	-.052
ACQUIS	.244*	.198*	.152*	.155*	.128*
"SES"	.313	.250	.177	.166	.126
WEST	-.068	-.057	-.041	-.043	-.001
CATHOL	-.054	-.028	.006	.006	.005
JEWISH	.019	.008	-.015	-.020	-.030
ABL		.210*	.186*	.169*	.009
PEER			.186*	.154*	.117*
PARENT			.074	.043	.003
EDEXP				.112*	.057
COLCUR					.186*
COURSE					.126*
RANK					.114*
R^2	.107	.146	.187	.195	.255

*Coefficient at least twice its standard error.

TABLE 5.2
(continued)

Predetermined Variables	(6) OTHEREXP	(7) OTHEREXP	(8) OTHEREXP	(9) OTHEREXP	(10) OTHEREXP	(11) OTHEREXP
FAOCC	-.009	-.012	.001	.000	-.002	.016
FAED	-.076	-.045	-.041	-.033	-.043	-.028
MOMED	.022	.018	.026	.031	.043	.045
PARINC	.040	.035	.037	.044	.058	.043
ACQUIS	-.158*	-.126*	-.099	-.101	-.084	-.046
"SES"	-.179	-.133	-.096	-.092	-.082	.056
WEST	.064	.057	.050	.051	.032	.027
CATHOL	.014	-.004	-.022	-.022	-.022	-.013
JEWISH	.040	.048	.055	.058	.062	.071
ABL		-.146*	-.134*	-.122*	.001	.023
PEER			-.064	-.041	-.019	.033
PARENT			-.078	-.055	-.030	-.030
EDEXP					-.048	-.017
COLCUR					-.136*	-.069
COURSE					.028	.077
RANK					-.181*	-.123*
EDUC						-.128*
PRETERMEXP						-.279*
R^2	.035	.053	.065	.069	.105	.190

*Coefficient at least twice its standard error.

TABLE 5.2
(continued)

Predetermined Variables	(12) ON-JOB	(13) ON-JOB	(14) ON-JOB	(15) ON-JOB	(16) ON-JOB	(17) ON-JOB	(18) ON-JOB
FAOCC	-.063	-.066	-.050	-.051	-.053	-.022	-.022
FAED	-.102	-.075	-.071	-.068	-.070	-.049	-.048
MOMED	.101	.098	.110	.111*	.114*	.123*	.123*
PARINC	-.039	-.044	-.040	-.038	-.034	-.034	-.034
ACQUIS	-.001	.029	.059	.058	.060	.063	.064
"SES"	.138	.119	.118	.118	.120	.125	.126
WEST	.022	.015	.005	.005	.005	-.005	-.005
CATHOL	.031	.015	-.007	-.007	-.006	.015	.015
JEWISH	-.125*	-.118*	-.104*	-.103*	-.103*	-.058	-.059
ABL		-.134*	-.120*	-.116*	-.101	-.053	-.053
PEER			-.108*	-.101	-.100	-.054	-.054
PARENT			-.058	-.050	-.048	-.050	-.051
EDEXP				-.025	-.023	.015	.015
COLCUR					-.026	.005	.006
COURSE					.031	.063	.062
RANK					-.035	.029	.030
EDUC						-.326*	-.325*
PRETERMEXP						.029	.032
OTHEREXP							.009
R^2	.039	.055	.071	.072	.073	.123	.123

*Coefficient at least twice its standard error.

TABLE 5.2
(continued)

Predetermined Variables	(19) FIRMEXP	(20) FIRMEXP	(21) FIRMEXP	(22) FIRMEXP	(23) FIRMEXP	(24) FIRMEXP	(25) FIRMEXP
FAOCC	-.093	-.095	-.077	-.079	-.065	-.031	-.022
FAED	-.044	-.024	-.020	-.000	.001	.028	.013
MOMED	-.016	-.018	-.002	.010	.010	.017	.041
PARINC	-.008	-.012	-.008	.010	-.001	-.017	.006
ACQUIS	-.104	-.083	-.048	-.055	-.045	-.004	-.029
"SES"	-.204	-.178	-.172	-.104	-.095	-.041	.047
WEST	.038	.033	.021	.023	.003	-.007	.008
CATHOL	.042	.030	.003	.004	-.001	.019	.012
JEWISH	-.060	-.055	-.036	-.028	-.025	.005	.044
ABL		-.098*	-.080	-.050	-.005	.041	.053
PEER			-.151*	-.094	-.079	-.001	.017
PARENT			-.045	.011	.023	.021	.004
EDEXP				-.198*	-.176*	-.125*	-.134*
COLCUR					-.015	.072	.034
COURSE					-.141*	-.073	-.031
RANK					.020	.112*	.045
EDUC						-.291*	-.361*
PRETERMEXP						-.290*	-.443*
OTHEREXP							-.549*
R^2	.052	.060	.085	.109	.122	.270	.514

*Coefficient at least twice its standard error.

TABLE 5.2
(continued)

Predetermined Variables	(26) SUPPLY	(27) SUPPLY	(28) SUPPLY	(29) SUPPLY	(30) SUPPLY	(31) SUPPLY	(32) SUPPLY
FAOCC	.031	.031	.026	.026	.021	.012	.012
FAED	-.048	-.048	-.049	-.049	-.050	-.056	-.055
MOMED	.147*	.147*	.143*	.144*	.140*	.136*	.136*
PARINC	.059	.059	.058	.060	.058	.054	.053
ACQUIS	.002	.002	-.008	-.009	-.010	-.000	-.000
"SES"	.161	.161	.149	.150	.143	.136	.137
WEST	-.024	-.024	-.021	-.020	-.021	-.017	-.017
CATHOL	-.064	-.064	-.057	-.057	-.062	-.069	-.068
JEWISH	.013	.013	.008	.009	.007	-.001	-.012
ABL		.002	-.003	-.002	.003	-.013	-.013
PEER			.037	.038	.038	.033	.033
PARENT			.018	.019	.017	.019	.019
EDEXP				-.004	-.007	-.015	-.015
COLCUR					.036	.042	.042
COURSE					-.004	-.003	-.004
RANK					-.029	-.041	-.040
EDUC						.110	.110
PRETERMEXP						-.099	-.097
OTHEREXP							.006
R^2	.034	.034	.035	.035	.036	.044	.044

*Coefficient at least twice its standard error.

TABLE 5.2
(continued)

Predetermined Variables	(33) OCC	(34) OCC	(35) OCC	(36) OCC	(37) OCC	(38) OCC	(39) OCC
FAOCC	.154*	.159*	.137*	.139*	.122*	.080*	.080*
FAED	.129*	.070	.066	.053	.059	.028	.028
MOMED	.006	.013	-.007	-.016	-.022	-.033	-.033
PARINC	-.050	-.040	-.046	-.057	-.051	-.045	-.045
ACQUIS	.120*	.058	.017	.022	-.001	-.020	-.020
"SES"	.300	.221	.166	.137	.136	.086	.086
WEST	-.148*	-.134*	-.118*	-.120*	-.077*	-.064	-.064
CATHOL	-.079	-.044	-.013	-.013	-.003	-.030	-.030
JEWISH	.135*	.120*	.096*	.090*	.084*	.031	.030
ABL		.283*	.262*	.241*	.090	.028	.028
PEER			.190*	.152*	.116*	.043	.043
PARENT			.045	.008	-.026	-.022	-.022
EDEXP				.132*	.082	.027	.028
COLCUR					.094	.032	.032
COURSE					.193*	.138*	.137*
RANK					.106*	.011	.012
EDUC						.414*	.414*
PRETERMEXP						.080	.082
OTHEREXP							.004
R^2	.149	.219	.255	.266	.319	.427	.427

*Coefficient at least twice its standard error.

TABLE 5.2
(continued)

Predetermined Variables	(40) EARN	(41) EARN	(42) EARN	(43) EARN	(44) EARN	(45) EARN	(46) EARN	(47) EARN
FAOCC	-.025	-.025	-.030	-.031	-.020	-.028	-.028	-.028
FAED	-.020	-.019	-.023	-.013	-.009	-.014	-.015	-.005
MOMED	.114*	.114*	.113*	.120*	.133*	.129*	.130*	.086
PARINC	.129*	.129*	.128*	.137*	.142*	.138*	.139*	.138*
ACQUIS	.125*	.125*	.110	.106	.109	.120*	.118*	.118*
"SES"	.268	.268	.243	.265	.287	.284	.284	.257
WEST	-.095*	-.095*	-.093*	-.092*	-.083	-.080	-.079	-.072
CATHOL	.073	.072	.080	.081	.102*	.096*	.095*	.103*
JEWISH	.132*	.132*	.134*	.138*	.144*	.127*	.129*	.126*
ABL		-.001	-.006	.001	-.029	-.043	-.043	-.048
PEER			-.003	.027	.019	.015	.016	.011
PARENT			.072	.103*	.103*	.104*	.104*	.109*
EDEXP				-.106	-.106	-.113*	-.114*	-.085
COLCUR					-.116*	-.109	-.111	-.129*
COURSE					.082	.084	.086	.072
RANK					.089	.079	.075	.066
EDUC						.104	.100	.175*
PRETERMEXP						-.098	-.106	-.001
OTHEREXP							-.028	.097
ON-JOB								.141*
FIRMEXP								.232*
SUPPLY								.152*
OCC								.091
R^2	.099	.099	.103	.110	.123	.131	.131	.212

*Coefficient at least twice its standard error.

TABLE 5.3
Effects of Social Background and Schooling on Labor Market Experiences and Labor Market Outcomes (N=495), Metric Coefficients

Predetermined Variables	(1) PRETERMEXP	(2) PRETERMEXP	(3) PRETERMEXP	(4) PRETERMEXP	(5) PRETERMEXP
FAOCC	.0123	.0132	.0082	.0084	.0042
FAED	.0968	.0423	.0358	.0217	.0301
MOMED	.0472	.0552	.0243	.0135	-.0107
PARINC	.0000	.0000	.0000	.0000	.0000
ACQUIS	1.286*	1.045*	.7981*	.8182*	.6718*
WEST	-.8290	-.7023	-.5052	-.5215	-.0153
CATHOL	-.7006	-.3654	.0848	.0823	.0633
JEWISH	.5224	.2070	-.4258	-.5517	-.8234
ABL		.2439*	.2164*	.1965*	.0110
PEER			.5344*	.4412*	.3363*
PARENT			.5132	.2937	.0215
EDEXP				.6211*	.3143
COLCUR					1.720*
COURSE					.1396*
RANK					.3898*

*Coefficient at least twice its standard error.

TABLE 5.3
(continued)

Predetermined Variables	(6) OTHEREXP	(7) OTHEREXP	(8) OTHEREXP	(9) OTHEREXP	(10) OTHEREXP	(11) OTHEREXP
FAOCC	-.0015	-.0020	.0001	.0000	-.0003	.0026
FAED	-.0743	-.0446	-.0402	-.0325	-.0425	-.0272
MOMED	.0260	.0217	.0309	.0368	.0511	.0531
PARINC	.0000	.0000	.0000	.0000	.0000	.0000
ACQUIS	-.6530*	-.5214*	-.4064	-.4173	-.3471	-.1894
WEST	.6184	.5494	.4817	.4906	.3025	.2597
CATHOL	.1405	-.0421	-.2255	-.2242	-.2280	-.1310
JEWISH	.8600	1.032	1.187	1.256	1.346	1.540
ABL		.1328*	-.1219*	-.1110*	.0013	.0211
PEER			-.1431	-.0922	-.0432	.0741
PARENT			-.4192	-.2994	-.1619	-.1636
EDEXP				-.3390	-.2095	-.0735
COLCUR					-.9845*	-.5028
COURSE					.0243	.0668
RANK					-.4866*	-.3300*
EDUC						-.1785*
PRETERMEXP						-.2189*

*Coefficient at least twice its standard error.

TABLE 5.3
(continued)

Predetermined Variables	(12) ON-JOB	(13) ON-JOB	(14) ON-JOB	(15) ON-JOB	(16) ON-JOB	(17) ON-JOB	(18) ON-JOB
FAOCC	-.0023	-.0024	-.0018	-.0018	-.0019	-.0008	-.0008
FAED	-.0220	-.0161	-.0152	-.0147	-.0152	-.0105	-.0104
MOMED	.0263	.0254	.0285	.0290*	.0296*	.0321*	.0320*
PARINC	-.0000	-.0000	-.0000	-.0000	-.0000	-.0000	-.0000
ACQUIS	-.0005	.0261	.0537	.0529	.0546	.0572	.0576
WEST	.0452	.0313	.0108	.0114	.0112	-.0106	-.0111
CATHOL	.0702	.0333	-.0154	-.0153	-.0126	.0334	.0337
JEWISH	-.5913*	-.5567*	-.4944*	-.4896*	-.4876*	-.2754	-.2784
ABL		-.0268*	-.0239*	-.0231*	-.0202	-.0105	-.0106
PEER			-.0533*	-.0498	-.0491	-.0264	-.0266
PARENT			-.0683	-.0599	-.0566	-.0603	-.0600
EDEXP				-.0236	-.0216	.0142	.0144
COLCUR					-.0417	.0083	.0093
COURSE					.0059	.0119	.0118
RANK					-.0207	.0170	.0177
EDUC						-.0994*	-.0990*
PRETERMEXP						.0050	.0054
OTHEREXP							.0020

*Coefficient at least twice its standard error.

TABLE 5.3
(continued)

Predetermined Variables	(19) FIRMEXP	(20) FIRMEXP	(21) FIRMEXP	(22) FIRMEXP	(23) FIRMEXP	(24) FIRMEXP	(25) FIRMEXP
FAOCC	-.0166	-.0170	-.0137	-.0140	-.0116	-.0055	-.0040
FAED	-.0471	-.0252	-.0216	-.0003	.0011	.0299	.0137
MOMED	-.0208	-.0240	-.0029	.0133	.0135	.0215	.0532
PARINC	.0000	.0000	.0000	.0000	.0000	.0000	.0000
ACQUIS	-.4691	-.3723	-.2174	-.2476	-.2100	-.0175	-.1306
WEST	.3970	.3463	.2148	.2394	.0282	-.0727	.0825
CATHOL	.4623	.3281	.0367	.0404	-.0068	.2140	.1357
JEWISH	-1.422	-1.295	-.8538	-.6642	-.5904	.1277	1.048
ABL		-.0976*	-.0797	-.0498	-.0052	.0404	.0529
PEER			-.3692*	-.2289	-.1928	-.0020	.0423
PARENT			-.2669	.0636	.1342	.1237	.0260
EDEXP				-.9350*	-.8336*	-.5902*	-.6342*
COLCUR					-.1183	.5664	.2660
COURSE					-.1329*	-.0688	-.0288
RANK					.0569	.3290*	.1319
EDUC						-.4400*	-.5467*
PRETERMEXP						-.2471*	-.3778*
OTHEREXP							-.5973*

*Coefficient at least twice its standard error.

TABLE 5.3
(continued)

Predetermined Variables	(26) SUPPLY	(27) SUPPLY	(28) SUPPLY	(29) SUPPLY	(30) SUPPLY	(31) SUPPLY	(32) SUPPLY
FAOCC	.8468	.8480	.7102	.7090	.5626	.3271	.3246
FAED	-7.875	-7.946	-8.140	-8.068	-8.259	-9.109	-9.082
MOMED	29.240*	29.250*	28.442*	28.497*	27.732*	26.979*	26.928*
PARINC	.0061	.0061	.0060	.0060	.0060	.0056	.0055
ACQUIS	1.345	1.032	-5.828	-5.930	-7.440	-.3005	-.1171
WEST	-39.005	-38.840	-33.606	-33.523	-32.861	-27.450	-27.702
CATHOL	-109.220	-108.785	-96.535	-96.523	-106.071	-117.110	-116.983
JEWISH	47.145	46.736	30.574	31.217	23.646	-40.226	-41.718
ABL		.3162	-.4306	-.3293	.4240	-1.912	-1.933
PEER			13.770	14.245	14.329	12.446	12.374
PARENT			16.146	17.266	15.491	16.682	16.841
EDEXP				-3.168	-5.382	-10.899	-10.827
COLCUR					43.591	50.776	51.263
COURSE					-.5493	-.4593	-.5241
RANK					-13.082	-18.210	-17.890
EDUC						25.424	25.597
PRETERMEXP						-12.905	-12.693
OTHEREXP							.9687

*Coefficient at least twice its standard error.

TABLE 5.3
(continued)

Predetermined Variables	(33) OCC	(34) OCC	(35) OCC	(36) OCC	(37) OCC	(38) OCC	(39) OCC
FAOCC	.1665*	.1729*	.1490*	.1504*	.1323*	.0873*	.0873*
FAED	.8351*	.4543	.4304	.3443	.3792	.1818	.1824
MOMED	.0462	.1023	-.0574	-.1230	-.1719	-.2595	-.2607
PARINC	-.0002	-.0002	-.0002	-.0002	-.0002	-.0002	-.0002
ACQUIS	3.264*	1.575	.4645	.5869	-.0289	-.5375	-.5330
WEST	-9.353*	-8.468*	-7.485*	-7.585*	-4.872*	-4.028	-4.034
CATHOL	-5.329	-2.985	-.8536	-.8684	-.2341	-2.031	-2.028
JEWISH	19.276*	17.071	13.675*	12.908*	12.001*	4.391	4.355
ABL		1.705*	1.573*	1.452*	.5437	.1690	.1685
PEER			2.822*	2.255*	1.713*	.6435	.6418
PARENT			1.611	.2736	-.9288	-.8014	-.7975
EDEXP				3.784*	2.348	.7867	.7884
COLCUR					4.502	1.544	1.556
COURSE					1.102*	.7880*	.7864*
RANK					1.882*	.2022	.2100
EDUC						3.797*	3.802*
PRETERMEXP						.4168	.4220
OTHEREXP							.0238

*Coefficient at least twice its standard error.

TABLE 5.3
(continued)

Predetermined Variables	(40) EARN	(41) EARN	(42) EARN	(43) EARN	(44) EARN	(45) EARN	(46) EARN	(47) EARN
FAOCC	-5	-5	-7	-7	-4	-6	-6	-6
FAED	-26	-26	-31	-17	-12	-19	-20	-7
MOMED	183*	183*	181*	192*	213*	207*	209*	138
PARINC	.1081*	.1080*	.1076*	.1154*	.1195*	.1157*	.1167*	.1162*
ACQUIS	697*	698*	610	590	608	666*	659*	657*
WEST	-1229*	-1230*	-1205*	-1189*	-1079	-1037	-1028	-933
CATHOL	1001	999	1110	1113	1404*	1320*	1315*	1429*
JEWISH	3858*	3860*	3899*	4025*	4189*	3696*	3753*	3666*
ABL		-2	-8	12	-35	-53	-52	-59
PEER			-10	83	59	46	49	33
PARENT			526	747*	753*	762*	756*	795*
EDEXP				-623	-624	-664*	-667*	-499
COLCUR					-1131*	-1067	-1086	-1262*
COURSE					97	98	101	85
RANK					323	285	273	238
EDUC						194	188	329*
PRETERMEXP						-104	-112	-.555
OTHEREXP							-37	131
ON-JOB								869*
FIRMEXP								287*
SUPPLY								1*
OCC								19

*Coefficient at least twice its standard error.

prior to their present employment.

Specific vocational preparation, or on-the-job training (ON-JOB), is modestly negatively correlated with years of schooling completed (r = -.311). This suggests that post-schooling training and formal academic education are, to some degree at least, alternative mechanisms for enhancing work-related skills, or more generally, marketability. This interpretation is strengthened somewhat by the patterning of the determinants of training. Several background and schooling experiences, by facilitating educational attainment, generally depress the likelihood of receiving on-the-job training (father's education, Jewish, ability, and peer plans). Net of schooling, however, only mother's education significantly affects vocational preparation, and it does so positively (column 18).

Each year of schooling clearly depresses the degree to which a respondent will receive any post-schooling training (column 18), a finding which does not support Bowman's (1974) speculation that workers who receive more education also receive more on-the-job training. Two conflicting interpretations of this negative effect are possible. Employers, perhaps believing accurately or not, that the certification of educated workers is prima facie evidence of adequate training, may be more likely to require less skilled workers (i.e.; those with relatively low education) to enroll in post-schooling,training programs. This interpretation, which hinges on the believed or actual efficacy of schooling to train workers, assumes that educational attainment actually does depress post-schooling vocational preparation. These results could, however, be artifactual since the item tapping training elicited self-reports of training activity.[5] Relatively highly educated men, regardless of their actual preparation, may feel (and, therefore, report) that their formal education was sufficient work preparation and, hence, that other types of training were unnecessary. I do not have data on actual enrollment in job training programs and, therefore, I cannot dismiss this explanation.

Neither component of previous work experience (PRETERMEXP, OTHEREXP) affects the allocation of training (column 18). The lack of substantially positive effects of the two pre-current job experience measures on vocational preparation is not consistent with the arguments of the dual-market theorists (e.g.; Gordon, 1972a; Doeringer and Piore, 1971) that workers must already be skilled or certified (by education or past work experience) in order to be placed in jobs which yield training opportunities. Whether one has participated in the labor market in the past appears irrelevant for subsequent training activity.

Data presented in Chapters 3 and 4 demonstrated that males from higher status and Jewish families have decided educational advantages. The results regarding post-schooling training, however, not only fail to reveal any notable upper-class "bias" in the distribution of these skills but even weakly suggest that men from "disadvantaged" backgrounds may receive more post-schooling training (column 12). Jewish men, as compared to Protestant men, and those with greater academic ability, for example, are significantly less likely to acquire specific training. These effects, largely indirect, are due to the influence of these variables in enhancing years of schooling completed. Educational attainment, as we have seen, in turn depresses the amount of on-the-job training received. The single major exception to this pattern is that of mother's education; men with highly educated mothers report receiving more on-the-job training, even net of educational attainment (column 18). I will discuss the implications of this coefficient later, in conjunction with the results of the estimation of the labor supply function.

Despite the background influences discussed above, the total or net social origin influences on the acquisition of training are rather small. The reduced form equation, specifying the impact of only social background, explains only 4 percent of the variance in on-the-job training (column 12). In a sense, then, the attainment of post-schooling skills is relatively more egalitarian than is the attainment of formal education. Insofar as experience and training opportunities enhance earnings, and as I show below, they do to a significant degree, non-schooling career training may be an important mechanism for promoting the economic achievements of lower-status white men.

The final post-schooling variable -- firm experience or job seniority -- is considered next. The structural equation for FIRMEXP (column 25) indicates a decided trade-off between current job experience and (1) time spent in school, (2) experience acquired during schooling, and (3) previous work experience. Each year of schooling "costs" about 0.55 of a year's firm experience. Likewise, each year of experience acquired during schooling and each year of previous experience decreases seniority, or firm experience, by 0.38 and 0.60 of a year, respectively. As I noted above, such strong negative effects are to be expected in a sample so age-homogeneous ($\overline{X} = 30.4; \sigma = .63$). For this reason, then, the model "accounts" for considerable variance in firm experience, about 51 percent. Interestingly, all of the remaining variables are of marginal importance. For the men studied here, the only marked influences on firm experience are other variables involving the use of time.

Thus far, I have discussed the dependence of several components of human capital (i.e.; experience and training) on their background and schooling antecedents. I move now to a consideration of annual hours worked in the market -- labor supply. Perhaps the most striking result is the unresponsiveness of supply to all of its posited antecedents. All variables together account for only 4.4 percent of the variance in hours worked annually, and only mother's education significantly affects labor supply (column 32). Each year of mother's education is worth, in total, about 29 hours annually (column 26). All intervening variables, moreover, mediate only 8 percent of this effect, so that even net of a number of other factors, including educational attainment, each year of mother's education increases annual labor supply by 27 hours (about equal to the non-significant effect of son's own educational attainment - column 32).

These results are consistent with earlier findings on on-the-job training, which suggested that maternal education registered a significant, net positive relationship on vocational training. Both of these data tend to support the human capital interpretation that more highly educated mothers succeed in teaching their children values and skills which are later rewarded in the labor market (e.g.; Hill and Stafford, 1974). These skills, or predispositions to acquire skills, are thought to primarily emanate from mothers rather than fathers, since mothers' time expenditures on children exceed those of fathers by at least a factor of four (Liebowitz, 1974a); moreover, the "quality" and quantity of such time "inputs" appear to vary positively with the educational attainment of the mother (Liebowitz, 1974a, Hill and Stafford, 1974).

The rather small R^2 for labor supply suggests that important variables are omitted from the supply function, among these being the influences of occupation, industry, firm policies, and union membership. Perhaps the most obvious omission of my SUPPLY equation, however, is wage rate. Economic theory posits that wage rate should negatively influence labor supply (Fleisher, 1970) and, indeed, the two variables are modestly negatively correlated in these data (r = -.40). Since my primary purpose, however, is to estimate the effect of labor supply on annual earnings rather than to predict supply, I cannot include wage rate in my earnings functions because earnings are an exact function of wages and supply.

The specifications of the occupational status equations (columns 33-39) are identical to those presented in Chapter 4, with the exception that the two types of non-current job experience are now included. Neither component of participation, however, substantially enhances occupational achievement (column 39). If work experience prior to entry into present job does increase a worker's stock of human capital, it is not reflected in the status of present job or, as I show below in Chapter 6, the complexity of work or employment in a job with heavy skill "investments." The inclusion of these variables, moreover, has virtually no influence on the estimated effects of the other variables in the model. One year of education, for example, is worth about 3.8 status points, regardless of the inclusion or exclusion of the experience measures. Since the other coefficients were discussed in detail in Chapter 4, I turn directly to the earnings equations (columns 40-47, Table 5.2).

Earnings

In this section, I will limit my discussion primarily to the consequences of work experience, on-the-job training, and labor supply in earnings functions. The effects of the background and adolescent variables were discussed in Chapter 4.

Although the bulk of the variance in earnings remains unexplained, the addition of the four labor market participation variables does increase the explained variance substantially, by almost 72 percent, from .124 (Table 5.4) to .213 (column 47). Thus my expectation that some of the variance unexplained by the social-psychological "status attainment" model could be accounted for by post-schooling labor market experiences is strongly supported. All four post-schooling "experiences" (OTHEREXP, ON-JOB, FIRMEXP, SUPPLY) contribute to economic success, though the effect of previous work experience (OTHEREXP) is non-significant.

Of the two types of post-schooling labor force participation, firm experience (FIRMEXP) appears to be the stronger determinant (column 47) of earnings. Indeed, it registers the strongest effect of all the variables in the

TABLE 5.4
Effects of Social Background, Schooling, and Occupational Status on Earnings, with Labor Market Experiences Excluded (N=495)

	(1) Metric Coefficients	(2) Standardized Coefficients	(3) Metric Coefficients	(4) Standardized Coefficients
FAOCC	-6	-.025	-7	-.033
FAED	-17	-.013	-21	-.016
MOMED	211*	.131*	216*	.135*
PARINC	.120*	.143*	.124*	.147*
ACQUIS	602	.108	608	.109
WEST	-1056	-.081	-981	-.076
CATHOL	1356*	.098*	1398*	.101*
JEWISH	3974*	.136*	3911*	.134*
ABL	-45	-.037	-48	-.039
PEER	34	.011	21	.007
PARENT	756*	.104*	771*	.106*
EDEXP	-662*	-.113*	-677*	-.115*
COLCUR	-1192*	-.122*	-1230*	-.126*
COURSE	90	.077	74	.064
RANK	282	.078	278	.077
EDUC	103	.055	23	.012
OCC			19	.093
R^2		.124		.130

*Coefficient at least twice its standard error.

earnings equation (compare standardized coefficients). Each year of firm experience is worth, on the average, $287 per year, or about 90 percent of the economic value of one year of schooling. Thus, a worker with the average amount of job seniority, 4.4 years, earns about $1250 annually more than a worker with no such experience. Each year of previous job experience (OTHEREXP) yields a payoff of $131 annually. The larger FIRMEXP coefficient probably reflects company policies concerning the financial and promotional opportunities associated with job seniority, as well as skills differentials. It should be emphasized that these effects are net of specific training and education, as well as other variables in the equation. While these data do not allow an unambiguous interpretation of the underlying reasons for these effects (see discussion in section 5.2), the OTHEREXP and, especially, FIRMEXP coefficients do suggest that labor market experience is of notable importance for economic achievements.

On-the-job training also appreciably enhances annual earnings (column 47). Each "unit" of training is worth $869 per year.[6] If a worker received all three types of training, then, he would earn, on the average, $2580 per year more than would a worker of similar background, ability, schooling, and labor force experience and supply but with no specific vocational training; this amounts to slightly more than a half of a standard deviation of the earnings variables and equals the economic benefits of about 8 years of formal education or firm experience. Based on these data, I conclude that the economic consequences of specific training activities are considerable indeed.

The results also indicate that work experience accrued during schooling (PRETERMEXP) is not rewarded by employers (column 47). While such employment may have desirable non-pecuniary outcomes (e.g.; acclimate youth to the world of work or provide adult role models other than teachers or relatives), it seems to offer no economic advantages later in these men's work lives. If, consistent with human capital theory, a skills or learning interpretation is placed on this rather negligible coefficient, "on-the-job" training occurs only in (or is rewarded only in) jobs taken after the termination of formal education. The results obtained for PRETERMEXP thus support both the theoretical formulations of Mincer (1974) concerning the production of human capital and the assumptions underlying the conventional procedures for estimating length of work experience from information on other variables, which, through their neglect of experience accrued prior to the termination of schooling, implicitly posit its inconsequence for subsequent market outcomes. I know of no other "test" of this assumption, but I have replicated this finding with data from the Coleman-Rossi "Retrospective Life History Survey."

In section 5.2, above, I noted that both previous market participation and post-schooling firm experience must be included in earnings equations lest the returns to either be underestimated. The reduced form OTHEREXP coefficient is $-37 (column 46), but the structural coefficient increases to $133. Full-time experience acquired after the termination of schooling but before entry into current job, therefore, registers two contradictory influences on earnings. It directly enhances economic success ($133 annually), but it also indirectly depresses earnings by reducing experience on current job (-.5973 × $388, or $171 annually). The depressant influence of OTHEREXP on FIRMEXP must be statistically controlled, therefore, in order to estimate the full impact of experience acquired after schooling but before entry into present job.

The final "experience" variable to be discussed is labor supply. Net of all other variables, each hour supplied is worth $1.23. A standard deviation increase in supply (σ= 599), therefore, results in an increase in annual earnings of $737. This corresponds roughly to the consequences of receiving one type of on-the-job training, or of having an additional 2.3 years of formal schooling. Even net of occupational status, work experience, vocational preparation, and education, supply does exhibit a marked impact on annual earnings. Additionally, SUPPLY accounts for 18 percent of the earnings - enhancing effect of mother's education, implying that one reason sons with highly educated mothers earn more is that they supply more labor to the market.

In sum, we see that adult "career contingencies" do facilitate economic attainments. And because these post-schooling experiences are relatively unaffected by social background and ability, these components of human capital investment, i.e.; labor market experiences, training, and supply, represent avenues for the advancement of men unable or unwilling to invest heavily in formal schooling.

Thus far I have focussed my attention on the economic benefits of a variety of labor market experiences, but the returns to schooling are estimated to be even larger after controlling for experience. Each year of schooling is worth around $329 (column 47), modestly larger than the estimated annual returns to firm experience. If this estimate is correct, then a college education is worth $1316 more than a high school education. A considerable earnings advantage thus accrues to highly educated men.

Notice that the structural EDUC coefficient is 69 percent larger than its reduced form EDUC counterpart,[7] which is $194 (column 45). By controlling for labor market experiences, then, the estimated returns to education actually increase. The structural estimate is larger because of the negative collinearity between education and post-schooling experience (OTHEREXP, FIRMEXP) and training. Years of schooling completed directly depresses years employed on present job (column 25) and reduces the amount of on-the-job training received (column 18). When these negative relationships are controlled, the estimated payoffs to schooling increase.

One important implication of these results is that socioeconomic achievement models of the sort estimated in Chapter 4 (i.e.; those which exclude post-schooling experiences) seriously underestimate the economic benefits of incremental schooling, at least for young men early in their occupational careers.[8] In the absence of controls for any of the labor experience variables, each year of schooling is estimated to yield only $23 (column 3, Table 5.4). This is, indeed, a serious underestimate. In order to obtain an unbiased structural estimate of the economic benefits of education, therefore, labor market experience and vocational training must be explicitly controlled, even for a population of age-homogeneous young workers (see also Mincer, 1974; Knapp and Hansen, 1976).

5.6 Conclusion

Post-schooling experiences are important determinants of earnings and account for some previously unexplained variance in economic success. Moreover, since these experiences are not heavily dependent on either social or religious background, they represent mechanisms through which men from lower-status families or "disadvantaged" religious backgrounds can increase their earnings potential. Because such adult experiences are largely insensitive to variations in social origins, they do not mediate much of the influence of social background on adult socioeconomic achievement. Thus, vocational preparation or labor force experiences -- at least those considered here -- are of little utility in explaining how and why men from higher status origins ultimately earn more in the labor market. The one exception to this generalization is found for mother's education. Present job experiences and achievements, i.e.; ON-JOB, FIRMEXP, OCC and SUPPLY, together account for 34 percent of the influence of mother's education on son's earnings (compare columns 46 and 47). One of the primary reasons, then, that men with highly educated mothers earn relatively more is that they acquire earnings-enhancing training and work more hours annually. These labor market activities, however, account for little of the advantages and disadvantages associated with the remaining status and religious origin variables. Finally, it is only too apparent that this model does not "explain" how men come to acquire differing levels of skills and training. What is needed, perhaps, are data on motivation to enroll in specific training programs, on sources of information available to the young adult about the availability of such opportunities, or on company policies concerning skill and training requirements. Unfortunately, such information is not available in the EEO data.

FOOTNOTES

1. For rather similar negative correlations between years of schooling completed and some measure of experience, see Hansen and Weisbrod (1973), Ashenfelter and Mooney (1968), and Featherman and Hauser (1976).

2. I am assuming here that the net earnings returns to experience are positive. Mincer (1974) has shown that only as men approach retirement age does experience yield negative returns. Moreover, an inspection of the estimates of a non-linear earnings model which includes squared experience terms supports this assumption (see Griffin, 1976b).

3. Human capital theory suggests that (a) the returns to schooling and experience decline at higher levels, and (b) the benefits of education (experience) may vary systematically as the level of experience (education) varies (Heckman and Polachek, 1974; Mincer, 1970, 1974; Becker, 1964; Stolzenberg, 1975; Flanagan, 1974). I found no evidence of such deviations from linearity and additivity in these data. The absence of such effects does not dispute either human capital theory or the results of past

research. It simply indicates that, because of (a) the relatively small sample size and (b) the relatively young age of these men (i.e.; skills depreciate as workers become older), the statistical and substantive importance of these effects was minimized (see Griffin, 1976b).

4. When references are made in this discussion to either standardized coefficients or coefficients of determination, the appropriate table to consult is Table 5.2. For the presentation of metric coefficients, see Table 5.3.

5. The specific item wording is: "Where did you get your training for your job?" Nine response alternatives were available (see Chapter 2).

6. The net dollars returns to the separate components of the training index are: apprenticeship training, $1106; on-the-job training, $635; and company training, $927.

7. Featherman and Hauser (1976), using the 1973 Occupational Changes in a Generation data, report that when controls are introduced for (estimated) experience, the returns to schooling increase 38 percent. Featherman and Hauser's sample contains men aged 20 to 64.

8. I refer only to the structural estimate of schooling. Because OTHEREXP and FIRMEXP follow the termination of schooling, they may be excluded from earnings or wage functions without biasing the schooling coefficient. It must be remembered, however, that the resulting schooling coefficient is a reduced form, not structural, estimate. See Featherman and Hauser (1976) for a similar finding.

Chapter 6

CHARACTERISTICS OF WORK

6.1 Introduction

I pointed out in Chapter 1 that the men analyzed here value about equally non-pecuniary and pecuniary job characteristics. Of the four non-pecuniary attributes most highly valued by the EEO men, two measure some aspect of the job itself ("challenging work"; "creative work"), one taps a subjective evaluation of work ("interesting work"), and one indexes the societal utility of work ("important work"). The issues to be pursued in this chapter are: (1) the antecedents of the placement of men in jobs which perhaps allow the realization of these expressed occupational values; and (2) the influence of two such job characteristics on observed earnings differentials. Auxiliary concerns are the degree to which occupational status serves, as is often assumed (Kohen, 1971), as a reasonable proxy for actual "desirable" work characteristics and the degree to which our estimates of occupational "inheritance" depend on the particular indicator of occupational achievement used.

While most sociological and economic investigations of socioeconomic achievement or labor market success have focussed on occupational status (or prestige) and earnings, several recent studies (e.g.; Kohn and Schooler, 1973; McLaughlin, 1975; G. Duncan, 1974) have investigated additional facets of work. In general, the results of these studies indicate that experience and (especially) education are most influential in accessing jobs which are complex, demanding, or require heavy skill "investments," with background exerting minor but non-negligible effects on such outcomes. This small body of research, though useful as a benchmark, has yet to consider how various educational experiences and schooling mechanisms might affect placement of men in "desirable" work situations. By including a fuller array of possible determinants of these particular "rewards" or conditions of work I can extend, or possibly modify, the conclusions reached by Kohn and Schooler (1973), McLaughlin (1975), and Duncan (1974), none of whom were able to assess the impact of a number of adolescent experiences and social-psychological influences.

6.2 Routines and Requisites of Jobs

Classifications of job conditions or occupational traits abound in the psychological (see the discussions in Holland, 1973 and Temme, 1975) and social science literature (see, for example, Reiss, 1961; McLaughlin, 1975; Kohn and Schooler, 1973; Bridges and Berk, 1974). Temme's (1975) has especially informed my present concerns. He distinguishes between three broad attributes of jobs--requisites, routines, and rewards. Requisites are, according to Temme (1975:140), "any social or physical condition which imposes a constraint on the eligibility of a person to qualify or to be selected for a job." Temme further notes that the requisites which have received the most attention in the literature include the level of skill and knowledge required to perform adequately at a job. In this analysis, requisites are measured by the following attributes of the occupation: General Educational Development (GED) and Specific Vocational Preparation (SVP), which are combined into a single index. The scores are taken from the Dictionary of Occupational Titles (DOT), as amended by Temme (1975). As I noted in Chapter 2, which contains greater detail on the measurement procedures employed, these particular characteristics were chosen both for theoretical reasons (e.g.; Temme, 1975) and because I had scores on other DOT characteristics for only a third of the occupations.

My indicator of occupational requisites (hereafter labelled "REQUISITE ") applies, as does Duncan's (1961) "socioeconomic status index," to all incumbents of a given occupation; although correlated with its individual-level analogs, education and training, REQUISITE is conceptually and empirically distinct. It reflects not individual resources but qualitative (e.g.; GED) and quantitative (e.g.; SVP) aspects of the skills and knowledge necessary for satisfactory occupational performance.

Routines, on the other hand, are "those aspects of jobs referring to content, task, or work function" (Temme, 1975: 130).

Perhaps the most widely used indicator of job requisites involves the extent to which a job involves mental, physical, and interpersonal activities (Kohn, 1969, 1976; Kohn and Schooler, 1973; Temme, 1975; Bridges and Berk, 1974; Spaeth, 1976a; Malkiel and Malkiel,1974). Kohn (1969) has labelled this particular routine "substantive complexity of work" (hereafter called "COMPLEX"). Further work by Kohn and his associates (1976; Kohn and Schooler, 1973) suggests that complexity of work with people, data, and things is the most important (albeit only one) component of occupational self-direction, a job attribute measuring the degree to which the job incumbent controls the nature and pace of work tasks. Spaeth (1976a) even suggests that work complexity may be the functional equivalent of job responsibility; that is, the degree to which workers must initiate tasks in the absence of explicit guidelines and utilize individual resources to obtain a required work-related objective.

Complexity of work with people, data, and things, moreover, corresponds closely to the non-pecuniary work attributes most valued by the EEO men ("challenging" and "creative" work). By using such a measure of work routines, I will also be able to build upon past research on the social and psychological determinants and the economic and emotional consequences of work complexity (e.g.; Kohn and Schooler, 1973; Kohn, 1969, 1976; Spaeth, 1976a; Bridges and Berk, 1974; Malkiel and Malkiel, 1974;

Lucas, 1974; G. Duncan, 1974).

The equations specifying the various dependencies are presented below.

6.3 The Model

In this chapter, the following equations will be estimated:

(6.1) OCC = f(FAED, MOMED, FAOCC, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, RANK, COLCUR, COURSE, EDUC, PRETERMEXP, OTHEREXP),

(6.2) REQUISITE = f(FAED, MOMED, FAOCC, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, RANK, COLCUR, COURSE, EDUC, PRETERMEXP, OTHEREXP),

(6.3) COMPLEX = f(FAED, MOMED, FAOCC, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, RANK, COLCUR, COURSE, EDUC, PRETERMEXP, OTHEREXP),

(6.4) EARN = f(FAED, MOMED, FAOCC, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, RANK, COLCUR, COURSE, EDUC, PRETERMEXP, OTHEREXP, ON-JOB, FIRMEXP, SUPPLY, OCC),

(6.5) EARN = f(FAED, MOMED, FAOCC, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, RANK, COLCUR, COURSE, EDUC, PRETERMEXP, OTHEREXP, ON-JOB, FIRMEXP, SUPPLY, REQUISITE, COMPLEX),

(6.6) EARN = f(FAED, MOMED, FAOCC, PARINC, ACQUIS, WEST, CATHOL, JEWISH, ABL, PEER, PARENT, EDEXP, RANK, COLCUR, COURSE, EDUC, PRETERMEXP, OTHEREXP, ON-JOB, FIRMEXP, SUPPLY, OCC, REQUISITE, COMPLEX).

Comparisons of the estimates of equations 6.4 and 6.6 will identify the extent to which these requisites and routines of work influence earnings over and above the effect attributed to occupational socioeconomic status. The means, standard deviations, and variable descriptions are presented in Table 6.1. The sample size for this analysis is 467.

6.4 Results

The coefficients resulting from OLS estimation of the above 6 equations are presented in Table 6.2 (standardized coefficients) and Table 6.3 (metric coefficients).[1]

Requisite and Complex

The two occupational attributes, skill or knowledge requisites and complexity of work, are highly correlated with occupational status (r=.676 and .612, respectively) and with each other (r=.665).[2] All three indicators of occupational achievement, therefore, will likely share common antecedents. The coefficients presented in Table 6.2 bear out this expectation rather dramatically.

Social origins modestly influence both COMPLEX (column 8) and REQUISITE (column 15), though the estimated effects are somewhat more pronounced for the latter. Father's occupational status and a Jewish background enhance both REQUISITE and COMPLEX, while attending school in the West in 1955 depresses these indicators of occupational attainment. Additionally,

TABLE 6.1

Variable Descriptions, Means, and Standard Deviations of All Variables Used in Chapter 6

Variable Symbol	Variable Description	N=467	
		$\overline{X}$	σ
FAED	Father's education	10.16	3.67
MOMED	Mother's education	10.76	3.04
FAOCC	Father's occupation	40.34	21.74
PARINC	Parental income	8706	5784
ACQUIS	Material possessions	.044	.875
WEST	Lived in west in 1955	.169	.375
CATHOL	Catholic	.148	.355
JEWISH	Jewish	.030	.171
ABL	Academic ability	7.75	3.89
PEER	Peer college plans	4.97	1.60
PARENT	Parental encouragement	2.24	.666
EDEXP	Educational expectations	1.95	.823
RANK	Senior class standing	1.96	1.33
COLCUR	Senior college track	.435	.496
COURSE	Science and math courses	7.69	4.15
EDUC	Educational attainment	14.59	2.58
PRETERMEXP	Experience acquired during schooling process	5.57	4.57
OTHEREXP	Post-schooling, previous work experience	3.03	3.60
ON-JOB	Training acquired on current job	1.17	.786
FIRMEXP	Post-schooling, current job experience	4.49	3.90
SUPPLY	Annual hours worked	2413	589
OCC	Occupational status	54.38	23.22

TABLE 6.1
(continued)

Variable Symbol	Variable Description	$\overline{X}$	σ
COMPLEX	Complexity of work with people, data, and things	.524	.719
REQUISITE	Skill and training demands of occupation	25.86	5.40
EARN	Annual earnings	11350	4897

FAED significantly and positively affects the skill requisites of son's present occupation. Rather similar standardized coefficients are obtained for occupational status, as measured by Duncan's SEI scale. Between 11 and 16 percent of the variance in all three indicators of occupational position is explained by social background.

Academic ability (ABL) appears notably more important for skill requisites (column 16) than for work complexity (column 9), though the reduced form coefficient is positive and significant for both occupational outcomes. Ability accounts for an additional 5 percent of the variance in REQUISITE, but only an additional 2 percent in COMPLEX. For both REQUISITE and COMPLEX, ability mediates about a third of the total influence of father's education, but very little of the salutary or depressant effects of other background variables. While more able men do obtain more skill-demanding and complex jobs than their less able counterparts, ability exerts a more pronounced effect on occupational status per se than on either of these two occupational outcomes (compare column 8 with columns 9 and 16).

Social-psychological influences on educational performance and ambition from "relevant" others (PEER and PARENT) exhibit greater salutary impact on work complexity (column 10) and status column 3) than on the skill demands of occupation (column 17). Interpersonal influences increase the explained variance in work complexity by 5.7 percent, while this increase is limited to 1.5

percent for REQUISITE. Parental and (especially) peer pressure and/or encouragement for college attendance apparently provides our respondents unmeasured skills or perferences for highly complex work, which account for most of the influence of father's occupation on COMPLEX. However, as I show below these effects are largely indirect, through increasing years of schooling completed.

Educational expectations, while modestly (and indirectly) enhancing occupational status achievement (column 4), have little effect on the requisites or complex routines of the jobs held by the men in our sample (see columns 18 and 11). The total effects of the three academic experience variables have some relevance to the determination of requisites, complexity, and status of current occupation. Scientific and mathematic coursework affects OCC (column 5), enrollment in a college curriculum influences work complexity (column 12), and class standing enhances skill requisites (column 19). Spaeth (1976b) suggests that the achievement process is characterized by exposure to and success in ever-increasingly complex environments. The above relationships are generally supportive of his reasoning. Coursework, college tracking, and academic performance probably tap, although loosely, the complexity of schooling environments (Spaeth suggests this). The transition from relatively complex school settings to relatively complex work environments, therefore, is not unexpected.

The results discussed thus far indicate that several background and schooling variables influence the skill-level of the occupation entered and the complexity of the work performed. They do so primarily, however, by affecting years of schooling completed, which, in turn, enhance occupational achievement. The salutary impact of association with college-oriented peers and of college curriculum on work complexity, for example, is largely due to the efficacy of these variables in increasing educational attainment (compare columns 12 and 13). Similarly, the modest degree of intergenerational continuity of occupational achievement observed for the skill-requisites variable is mainly a function of the influence of father's occupation on son's educational certification and the subsequent education-REQUISITE linkage. With education controlled, the direct effect of father's occupational status on REQUISITE is reduced by 53% (from that which was observed in column 19) and is of little substantive importance (see column 20). Years of school completed registers, without question, the most pronounced effect on all three dimensions of occupational success considered here (see columns 7, 14, and 21). In fact, educational attainment is the only variable exerting a substantively important structural influence on either REQUISITE or COMPLEX. It "uniquely" explains between 11 (OCC, COMPLEX) and 14 (REQUISITE) percent of the variance in these aspects of occupational achievement.

Thus between 25 (OCC, COMPLEX) and 35 (REQUISITE) percent of the explained variance in occupational position (broadly defined) is due solely to the efficacy of schooling. Each year of schooling completed is worth, on the average, .13 of a unit of complexity; this amounts to a quarter of a standard deviation. A college diploma, then, is "worth" a full standard deviation more of work complexity than is a high school education. Rather similar results are obtained for the skill-level of current occupation. An increase in educational attainment of 1 year yields, on the average, 1.1 units, or a fifth of a standard deviation, increase in REQUISITE.

Education, then, does more than merely lead to "status" or earnings payoffs in the labor market. Schooling also appears to materially affect (1) the placement of men in demanding jobs with very high entrance requirements and (2) the complexity of the work performed on the job. It should be recalled, moreover, that these attributes correspond closely to the actual work values of a large percentage of these men. The actualization of important occupational values, then, depends on educational certification. Background characteristics (with the notable exception of attending school in the West), ability, adolescent experiences, and work experience accrued before entry into present job all appear unimportant once educational attainment differences

TABLE 6.2
Effects of Social Background, Schooling, and Labor Market Experiences on Occupational Achievement and Earnings (N=467), Standardized Coefficients

Predetermined Variables	(1) OCC	(2) OCC	(3) OCC	(4) OCC	(5) OCC	(6) OCC	(7) OCC	(8) COMPLEX	(9) COMPLEX	(10) COMPLEX
FAED	.108	.043	.042	.028	.034	-.002	-.003	.076	.046	.042
MOMED	.022	.036	.011	-.002	-.006	-.017	-.017	.065	.071	.046
FAOCC	.168*	.174*	.144*	.145*	.122*	.074	.074	.101*	.104*	.067
PARINC	-.050	-.044	-.055	-.071	-.062	-.052	-.052	.014	.017	.005
ACQUIS	.110*	.041	.003	.010	-.007	-.025	-.025	.090	.058	.008
"SES"	.295	.219	.145	.149	.126	.082	.081	.257	.207	.110
WEST	-.170*	-.155*	-.141*	-.143*	-.100*	-.080*	-.079*	-.142*	-.135*	-.119*
CATHOL	-.083	-.046	-.014	-.015	-.004	-.035	-.036	-.042	-.025	.014
JEWISH	.133*	.115*	.088*	.080*	.076	.019	.020	.123*	.115*	.087*
ABL		.313*	.292*	.269*	.135*	.066	.067		.144*	.119*
PEER			.208*	.164*	.128*	.051	.051			.212*
PARENT			.047	.006	-.021	-.021	-.021			.100*
EDEXP				.153*	.109*	.048	.049			
RANK					.086	-.013	-.016			
COLCUR					.073	.015	.014			
COURSE					.195*	.141*	.142*			
EDUC						.442*	.440*			
PRETERMEXP						.073	.067			
OTHEREXP							-.019			
R^2	.157	.243	.286	.301	.347	.465	.465	.113	.132	.189

*Coefficient at least twice its standard error.

TABLE 6.2
(continued)

Predetermined Variables	(11) COMPLEX	(12) COMPLEX	(13) COMPLEX	(14) COMPLEX	(15) REQUISITE	(16) REQUISITE	(17) REQUISITE
FAED	.034	.038	.003	.006	.157*	.108*	.106*
MOMED	.038	.025	.014	.012	-.016	-.005	-.019
FAOCC	.067	.046	-.001	-.002	.145*	.150*	.131*
PARINC	-.004	-.004	.002	-.002	-.115*	-.111*	-.117*
ACQUIS	.012	-.003	-.012	-.010	.076	.025	.000
"SES"	.094	.064	.036	.034	.255	.205	.178
WEST	-.120*	-.098*	-.078*	-.081*	-.218*	-.206*	-.198*
CATHOL	.013	.005	-.026	-.024	-.047	-.019	.001
JEWISH	.083*	.076	.015	.010	.137*	.123*	.108*
ABL	.106*	.033	-.037	-.038		.237*	.224*
PEER	.187*	.167*	.097	.095			.114*
PARENT	.077	.056	.058	.058			.043
EDEXP	.084	.053	-.005	-.006			
RANK		.023	-.071	-.062			
COLCUR		.138*	.089	.096			
COURSE		.058	.012	.005			
EDUC			.458*	.467*			
PRETERMEXP			.003	.028			
OTHEREXP				.080			
R^2	.194	.213	.319	.324	.150	.199	.214

*Coefficient at least twice its standard error.

TABLE 6.2
(continued)

Predetermined Variables	(18) REQUISITE	(19) REQUISITE	(20) REQUISITE	(21) REQUISITE	(22) EARN	(23) EARN	(24) EARN
FAED	.099	.112*	.072	.072	-.019	-.020	-.023
MOMED	-.025	-.030	-.042	-.042	.100	.100	.099
FAOCC	.132*	.129*	.074	.074	-.034	-.034	-.043
PARINC	-.125*	-.126*	-.100	-.100	.131*	.131*	.129*
ACQUIS	.004	-.011	-.021	-.020	.138*	.137*	.121*
"SES"	.176	.179	.132	.132	.269	.268	.248
WEST	-.200*	-.167*	-.144*	-.144*	-.089*	-.089*	-.087*
CATHOL	-.000	.015	-.021	-.021	.062	.062	.071
JEWISH	.105*	.104*	.033	.033	.130*	.130*	.131*
ABL	.213*	.072	-.008	-.007		.005	-.002
PEER	.094	.061	-.019	-.019			.001
PARENT	.024	.000	.002	.002			.078
EDEXP	.072	.038	-.028	-.028			
RANK		.184*	.077	.076			
COLCUR		.056	.000	.000			
COURSE		.090	.037	.038			
EDUC			.524*	.525*			
PRETERMEXP			.002	.002			
OTHEREXP				-.001			
R^2	.218	.257	.396	.396	.098	.098	.098

*Coefficient at least twice its standard error.

TABLE 6.2
(continued)

Predetermined Variables	(25) EARN	(26) EARN	(27) EARN	(28) EARN	(29) EARN	(30) EARN	(31) EARN
FAED	-.015	-.012*	-.016*	-.018	-.001	-.017	-.016
MOMED	.106	.119	.117	.118*	.075	.084	.084
FAOCC	-.044*	-.032*	-.039*	-.039*	-.038*	-.045*	-.049*
PARINC	.138	.144*	.139*	.141*	.143*	.164*	.164*
ACQUIS	.116	.120	.132	.131	.128	.127	.127
"SES"	.260	.281	.282	.283	.262	.274	.274
WEST	-.086	-.075*	-.071	-.070	-.061*	-.045*	-.045*
CATHOL	.072*	.095*	.090*	.089*	.099*	.098*	.100*
JEWISH	.135	.141	.125	.129	.130	.127	.126
ABL	.012	-.030	-.043	-.042	-.050	-.041	-.046
PEER	.027	.017	.016	.018	.005	.023	.020
PARENT	.102	.103	.106*	.106*	.107*	.112*	.114*
EDEXP	-.089	-.090	-.094	-.094	-.077	-.066	-.069
RANK		.086	.080	.073	.070	.048	.051
COLCUR		-.115	-.108	-.113	-.127*	-.115*	-.114*
COURSE		.094	.099	.104	.072	.080	.072
EDUC			.091	.084	.153*	.132	.122
PRETERMEXP			-.107	-.126*	-.001	-.001	-.002
OTHEREXP				-.059	.088	.084	.089
ON-JOB					.139*	.136*	.132*
FIRMEXP					.236*	.220*	.223*
SUPPLY					.159*	.151*	.155*
OCC					.111*	----	.064
REQUISITE					----	.209*	.185*
COMPLEX					----	-.048	-.056
R^2	.108	.122	.130	.133	.210	.223	.224

*Coefficient at least twice its standard error.

TABLE 6.3
Effects of Social Background, Schooling, and Labor Market Experiences on Occupational Achievement and Earnings (N=467), Metric Coefficients

Predetermined Variables	Dependent Variables (1) OCC	(2) OCC	(3) OCC	(4) OCC	(5) OCC	(6) OCC	(7) OCC	(8) COMPLEX	(9) COMPLEX	(10) COMPLEX
FAED	.685	.275	.265	.176	.216	-.013	-.017	.015	.009	.008
MOMED	.170	.274	.087	-.012	-.050	-.127	-.122	.015	.017	.011
FAOCC	.179*	.186*	.154*	.154*	.130*	.079	.079	.003*	.003*	.002
PARINC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ACQUIS	2.908*	1.098	.066	.272	-.189	-.657	-.668	.074	.048	.007
WEST	-10.514*	-9.603*	-8.738*	-8.847*	-6.157*	-4.941*	-4.902*	-.271*	-.258*	-.229*
CATHOL	-5.440	-3.030	-.901	-1.002	-.283	-2.308	-2.338	-.086	-.051	.027
JEWISH	18.114*	15.705*	11.920*	10.921*	10.312	2.538	2.705	.519*	.485*	.368*
ABL		1.868*	1.741*	1.602*	.802*	.396	.397		.027*	.022*
PEER			3.022*	2.376*	1.851*	.738	.746			.095*
PARENT			1.646	.212	-.722	-.732	-.733			.108*
EDEXP				4.327*	3.080*	1.366	1.372			
RANK					1.499	-.233	-.272			
COLCUR					3.425	.718	.645			
COURSE					1.091*	.789*	.799*			
EDUC						3.976*	3.955*			
PRETERMEXP						.371	.340			
OTHEREXP							-.121			

*Coefficient at least twice its standard error.

TABLE 6.3
(continued)

Predetermined Variables	Dependent Variables (11) COMPLEX	(12) COMPLEX	(13) COMPLEX	(14) COMPLEX	(15) REQUISITE	(16) REQUISITE	(17) REQUISITE
FAED	.007	.008	.001	.001	.231*	.158*	.156*
MOMED	.009	.006	.003	.003	-.028	-.009	-.034
FAOCC	.002	.002	.000	.000	.036*	.037*	.033*
PARINC	.000	.000	.000	.000	.000*	.000*	-.000*
ACQUIS	.010	-.002	-.010	-.008	.472	.153	.000
WEST	-.231*	-.188*	-.149	-.155*	-3.132*	-2.972*	-2.856*
CATHOL	.026	.010	-.053	-.049	-.716	-.291	.010
JEWISH	.351*	.322	.063	.041	4.323*	3.899*	3.421*
ABL	.020*	.006	-.007	-.007		.329*	.311*
PEER	.084*	.075*	.044*	.042			.386*
PARENT	.083	.061	.062	.062			.347
EDEXP	.074	.046	-.004	-.005			
RANK		.012	-.038	-.033			
COLCUR		.200*	.130	.139			
COURSE			.002	.001			
EDUC			.127*	.130*			
PRETERMEXP			.000	.004			
OTHEREXP				.016			

*Coefficient at least twice its standard error.

TABLE 6.3
(continued)

Predetermined Variables	(18) REQUISITE	(19) REQUISITE	(20) REQUISITE	(21) REQUISITE	(22) EARN	(23) EARN	(24) EARN
			Dependent Variables				
FAED	.146	.165*	.105	.105	-25	-26	-31
MOMED	-.045	-.053	-.075	-.075	161	161	159
FAOCC	.033*	.032*	.018	.018	-8	-8	-10
PARINC	-.000*	-.000*	-.000	-.000	.1107*	.1107*	.1094*
ACQUIS	.023	-.067	-.128	-.128	772*	767*	677*
WEST	-2.868*	-2.400*	-2.070*	-2.070*	-1166*	-1163*	-1140*
CATHOL	-.001	.228	-.315	-.316	853	861	983
JEWISH	3.313*	3.285*	1.049	1.052	3738*	3730*	3752*
ABL	.296*	.100	-.010	-.010		6	-2
PEER	.316	.207	-.065	-.065			2
PARENT	.192	.004	.016	.016			576
EDEXP	.470	.251	-.186	-.186			
RANK		.747*	.310	.309			
COLCUR		.607	.003	.001			
COURSE		.118	.049	.049			
EDUC			1.097*	1.097*			
PRETERMEXP			.002	.002			
OTHEREXP				-.002			

*Coefficient at least twice its standard error.

TABLE 6.3
(continued)

Predetermined Variables	Dependent Variables (25) EARN	(26) EARN	(27) EARN	(28) EARN	(29) EARN	(30) EARN	(31) EARN
FAED	-20	-16	-21	-24	-5	-23	-21
MOMED	171	192*	187*	190*	120	136	136
FAOCC	-10	-7	-9	-9	-8	-10	-10
PARINC	.1171*	.1222*	.1173*	.1194*	.1205*	.1372*	.1372*
ACQUIS	652	671*	739*	732*	731*	723*	729*
WEST	-1127	-977	-932	-907	-792	-590	-583
CATHOL	995	1309*	1241	1221	1368*	1342*	1358*
JEWISH	3875*	4039*	3584*	3695*	3642*	3596*	3576*
ABL	15	-38	-54	-53	-62	-53	-57
PEER	82	52	50	55	8	61	53
PARENT	752	761	780*	780*	806*	790*	802*
EDEXP	-532	-535	-561	-558	-447	-403	-414
RANK		314	293	268	256	183	188
COLCUR		-1139	-1070	-1118	-1249*	-1192*	-1191*
COURSE		110	116	123	85	95	89
EDUC			172	158	278*	226	212
PRETERMEXP			-115	-134*	4	4	3
OTHEREXP				-80	121	116	121
ON-JOB					865*	842*	823*
FIRMEXP					292*	287*	291*
SUPPLY					1.2*	1.3*	1.2*
OCC					24*	---	9
REQUISITE						179*	164*
COMPLEX						-329	-385

*Coefficient at least twice its standard errcr.

are controlled. These data are very consistent with results presented by Spaeth (1976a), McLaughlin (1975), Kohn and Schooler (1973), and G. Duncan (1974), all of whom report pronounced consequences of education for similar non-pecuniary occupational outcomes and marginal direct influences for all other variables. It appears then that education is quite instrumental in providing access to a broad range of scarce and desired labor market rewards.

Earnings

The data presented in the above chapters indicate that high status occupations offer greater economic rewards. The basis for this relationship, however, is not understood, even though it is a consistent finding in sociological literature (e.g.; Jencks, et al., 1972; Alexander, Eckland, and Griffin, 1975; Sewell and Hauser, 1972, 1975; Duncan, Featherman, and Duncan, 1972). The recent research by Bridges and Berk (1974), Malkiel and Malkiel (1974), McLaughlin (197), and Spaeth (1976a) suggests that work which is demanding, complex, involves high training requirements or scarce social or intellectual skills or the exercise of power or responsibility may offer higher wages, net of individual level characteristics. The results are tentative in all cases, however. The conclusions of Bridges and Berk (1974) and the Malkiels' (1974) are based on a small number of professional or other white collar workers employed in just a few firms, while those of Malkiel and Malkiel (1974), McLaughlin (1975), and Spaeth (1976a) are plagued by severe collinearity among crucial variables.[3] Hence, more research is needed on this topic and the results of equations 6.4 through 6.6 are instructive.

Column 29 shows that each occupational status point is worth, on the average, about $24 per year, with other variables controlled. Consider now column 30, which presents the estimates of the efficacy of the non-status job attributes, REQUISITE and COMPLEX. Each unit increase of skill and/or training requirements is worth about $179 on the average, again with other things equal. A standard deviation change in REQUISITE, then, has considerable impact on annual earnings, $967 per year. This compares to about $560 annually for a standard deviation increase in occupational status. Complexity, on the other hand, does not seem to enhance earnings, even when occupational status is not in the earnings function (column 30). Complexity actually registers a negative influence on earnings, but the standardized coefficient is trivial in magnitude and statistically insignificant.

Thus far I have considered the influence of status and occupational characteristics separately. In column 32, however, I include occupational status, REQUISITE, and substantive complexity of work in the same equation (column 31). The estimates of this equation suggest that the skills or training demands of occupations (REQUISITE) are the only occupational condition which enhances earnings. Even net of occupational status, each unit of REQUISITE is worth, on the average, $164 annually. Since this variable has no intrinsically meaningful metric, a few hypothetical examples of the consequences of changes in REQUISITE will permit a better appreciation of consequences of the training requirements of one's occupation. A standard deviation increase (or decrease) in REQUISITE results in an increase (or decrease) to annual earnings of $886, about equal to four years of academic schooling or firm experience. An upward shift from 0 (the lowest possible score) to 26 (the sample average) is worth $4100 per year, or about .84 of a standard deviation in annual earnings. Even controlling for a variety of other variables, including a respondent's observed level of experience, training, education, and labor supply, as well as occupational status, I find that the skills and training requirements of one's present job are quite influential in allocating economic rewards to job incumbents.

The remaining two indicators of occupational position, complexity of work and occupational status, have essentially no effect on earnings when REQUISITE is controlled. The first outcome is consistent with the findings of Spaeth (1976a). Perhaps the most interesting aspect of these data is the attenuation of the occupational status coefficient and the relative lack of change in the REQUISITE coefficient when the earnings equation includes both variables (compare columns 29 and 30 with 31). When REQUISITE is included in the earnings function, the economic returns to occupational status decrease from $24 to $9 annually, a drop of 63 percent, while the coefficient associated with REQUISITE decreases by only 8 percent, from $179 to $164 annually. It appears, then, that the economic payoffs of occupational position depend much more on the skills or training requirements of occupations rather than their general socioeconomic status. Status per se is not particularly consequential for the determination of earnings.

These results are suggestive of why earnings differentials are observed for occupations but, of course, do not resolve the issue. If skill or training requirements of occupations (or jobs) are equated with an occupation's "utility" to society, as some theoreticians argue (e.g.; Davis and Moore, 1945), the coefficients suggest that incumbents of highly "functional" occupations receive greater financial remuneration. An alternative interpretation, however, assumes that entry requirements may be artificially high or arbitrarily established via political mobilization and control (e.g.; R. Hall, 1969). Thus, incumbents of occupations requiring advanced skills are compensated for their political power, it is argued, rather than for their societal "utility."

Although the use of different indicators of occupational achievement result in different conclusions concerning the basis of the occupation-earnings relationship, interpretations of the influences of other variables are practically invariant across the attributes of occupation used. This can be demonstrated simply by comparing the coefficients of the remaining variables (compare columns 29 and 30). That the returns to educational attainment are somewhat lower (19%) if REQUISITE and COMPLEX are employed rather than occupational status is the only important exception. The effects of training, supply, and all three types of work experience are essentially the same. Importantly, the advantages or disadvantages associated with social origins (parental achievement, religious background, and geographic location of schools) are about the same regardless of the measure of occupation employed.

Before moving to Chapter 7, one issue remains to be discussed -- the effects of sustained employment in complex or demanding jobs. I have thus far assumed linear and additive relationships among all predetermined variables. Both dual-labor market theorists (e.g.; Gordon, 1972a; Piore, 1973; Wachter, 1974) and human capital theorists (e.g.; Rosen, 1972; Mincer, 1974) imply that the monetary value of work experience may be conditional on the skill-producing quality of that experience. The assumption here is that not all work experience is skill-producing. On the one hand, experience on work tasks which are quickly learned, mundane, and routine may not be skill-producing and, therefore, may not represent a human capital "investment." The task may just be too simple to stimulate the employee's productive potential. On the other hand, work experience on tasks which are complex, or intellectually demanding, may be conducive to the development of skills. The distinction, then, is between "length of experience" on a job or in the market and the amount of "learning " which takes place during this time. There is some evidence that demanding, complex work may contribute to the growth in cognitive abilities of adults (Kohn and Schooler, 1973) but the specific hypothesis regarding the interaction between experience and job attributes has not been directly tested. One method of doing so is to assess the significance of the additional explained variation in earnings due to interaction between work experience and REQUISITE and work experience and complexity. I performed this test and found the interaction terms to be insignificant, though in the predicted direction. Insofar as this represents a valid test of the hypothesis, I conclude that the economic returns to firm experience do not significantly depend on the complexity of work or the skills or training requirements of present occupation. It may be argued, however, that the interaction effects are detectible only for older men who have spent appreciably more time in the labor market. I cannot, of course, test this hypothesis with the EEO data and I know of no one who makes such an argument.

6.5 Conclusions

The purpose of this chapter was to expand the concept of occupational achievement to include (1) skill and training requirements demanded by occupations and (2) the substantive complexity of day-to-day work routines. My motivation here was to employ a measure of occupational achievement which more closely corresponds to the expressed occupational values of these men than does occupational socioeconomic status (the Duncan, 1961 index) and to investigate the "causes" and economic "consequences" of such attainment.

Even if it can be assumed that the alternative indices of occupational position capture the reality of work place prerequisites and activities, our understanding of occupational achievement processes remains essentially unchanged from past studies which have relied upon measures of occupational status only. Educational certification is the only crucial variable involved in positioning men in the occupational structure, regardless of whether occupation is measured by status, substantive complexity of work, or skills and training demands. The patterning of causal relationships is substantially the same for all three indicators of occupational achievement. My estimates of the degree to which and the manner in which status origins influence occupational success are almost identical across all three indicators of the "desirability" of occupations.

These results have important implications for the continued use of Duncan's occupational status index as a measure of occupational achievement. Stated simply, it is this: no vital information is lost concerning the degree of occupational "inheritance" or the importance of educational sorting, selecting, or certification for occupational achievement if occupational status is employed rather than indices of work complexity or job requisites.

We cannot be quite as sanguine about the utility of Duncan's SEI measure, however, if our interest is the influence of occupational attributes on earnings. The data presented in this chapter suggest that occupational status per se has little influence on achievement when the skill and training requirements of occupations are also considered. Future research, then, perhaps should include this and other non-status characteristics of work or occupations as explanatory variables in earnings functions. Even on this issue, however, we should not downplay the utility of occupational status as a measure of occupational position. My results suggest that in the absence of data on skill requirements of occupations, as is almost universally the case, occupational status appears to serve as an adequate proxy (e.g.; Kohen, 1971). Nuances concerning the basis of the occupation-earnings relationship are obscured, but no essential information about the dynamics of earnings attainments is entirely lost.

Research on the processes governing the placement of men in occupations with "desirable" or "undesirable" characteristics is in its very early stages. The two attributes considered here clearly do not exhaust the possible range of interesting and important non-pecuniary work attributes. The Dictionary of Occupational Titles, for example, also contains information on working conditions, job autonomy, and repetitiveness of work, among other data. Using such information, it will be possible to further refine and extend our understanding of the process of "occupational inheritance" and of the impact of father's work on son's intellectual and psychological functioning, to name just two lines of fruitful inquiry. Unfortunately, missing data on the above characteristics proved too extensive to allow me to use such data in this thesis.

FOOTNOTES

1. When references are made in this discussion to either standardized coefficients or coefficients of determination, the appropriate table to consult is Table 6.2. For the presentation of metric coefficients, see Table 6.3.

2. Spaeth (1976a) reports that the correlation between substantive complexity of work and occupational status is .79. His data are from a 1964 national sample of employed men. McLaughlin (1975) observes that the correlation between "intellectual skills" required by occupations, which is an index quite comparable in meaning and construction to my REQUISITE measure, and occupational _prestige_ is .701.

3. Spaeth (1976a) included both occupational status and complexity of work in his income functions, but the latter variable registered only a negligible net effect. The two occupation variables correlated at .79 (see above footnote). McLaughlin (1975), however, using a similar earnings model, reports that occupational prestige and "intellectual skills" required by occupations were both

significant and of roughly equal importance ($\beta \approx .15$). Siegel (1971) and Temme (1975) have shown that, at the level of the occupation, status or prestige is strongly affected by complexity of work and training requirements. Thus, Spaeth (and, perhaps, McLaughlin) probably underestimated the effect of complexity of work on income because he simultaneously considered complexity and a partial function of it (occupational status).

Malkiel and Malkiel (1974) report strong "job level" (organizational responsibility) effects on earnings. In this case, however, the two variables correlate at .8 and may be proxies for one another. Thus, the Malkiels' estimate of the importance of work characteristics probably is biased upward.

Chapter 7

WORK SATISFACTION

7.1 Introduction

The last several years have witnessed a renewed political and scholarly interest in the causes and consequences of worker satisfaction and dissatisfaction. Industrial disputes, political "populism," and general societal alienation often are attributed to the quality of work and the emotional reactions of individuals to their work (see, especially, the discussion in HEW, 1973; Sheppard and Herrick, 1972).[1] Policy researchers and some in the "social indicators movement" (see Land, 1974, 1975; Seashore, 1974; Seashore and Taber, 1975) assert that work satisfaction should be considered an indicator of the quality of employment and a social indicator sufficiently important to be assessed periodically and subjected to trend analysis.[2]

Major concerns about the sources of work dissatisfaction often center around possible differences in levels of work satisfaction across major educational, occupational, or income groups (see, for example, Quinn and Shepard, 1974). These differences have so frequently been assumed that they are now accepted as truisms. In a review of several "representative sample" surveys of the determinants of work satisfaction, Blauner (1966: 474), for example, concluded that "Work satisfaction varies greatly by occupation." Blauner further noted (p. 477) that "jobs that have high prestige will tend to be valued for their status rewards even when 'objective' aspects of the work are undesirable; similarly, low-status jobs will tend to be undervalued and disliked." Seashore and Taber (1975: 349) also note that this occupational "status" effect should not be confused with properties of jobs. Many other studies (e.g.; Centers, 1949; G. Duncan, 1974; Kalleberg, 1974; Morse and Weiss, 1955; Gurin, Veroff, and Feld, 1960; Quinn and Shepard, 1974; Quinn, Staines, and McCullough, 1974; Parnes, et al., 1968) have reported similar findings: work satisfaction is significantly and positively affected by occupational placement. Higher income or higher salaried individuals also have been shown to be more satisfied with their work (Beaton, 1975; Kalleberg, 1974; Quinn, Staines, and McCullough, 1974). Beaton's (1975: 384) comment is an apt summary of these findings: "Apparently, then, a man's salary has much to do with his attitudes toward his work..." Unlike the literature on occupational and income effects on satisfaction, that dealing with the relationship between educational attainment and work attitudes is ambiguous (see the review in Herzberg, et al., 1957). However, several researchers (e.g.; Gurin, Veroff, and Feld, 1960; Morse, 1953; Quinn, Staines, and McCullough, 1974) have reported positive education-satisfaction associations.

The social and manpower policy implications of these findings, if they are correct, are clear. Increased worker satisfaction will result from policies designed to facilitate educational, occupational, and earnings (or income) achievements. While no one has seriously argued that such policies or achievements are a panacea for all of the problems surrounding worker motivation and alienation, some, especially those in the business community (see Bendix, 1956; Perrow, 1970), have advocated just such interventions.

However, this body of findings, and the policy implications deriving from them, are being reconsidered in light of the methodological advances in social science research since the mid-1960's. Jencks, et al. (1972) and Kalleberg (1974) note, for example, that these past results may have been overly simplistic since they were usually based only on gross cross-tabular percentage differences or gross differences in mean satisfaction across categories of the career achievement variables. When summary measures of association, such as eta or the product-moment correlation, are examined the relationships between socioeconomic achievement and work satisfaction appear much smaller. These correlations generally range from .00 to around .25 depending upon the specific measures of achievement and work satisfaction (see Jencks, 1972; Quinn, Staines, and McCullough, 1974; Kalleberg, 1974). Hodge (1970), as an example, reports an R^2 of .011 for a regression of "overall work satisfaction" on educational attainment, family income, occupational prestige (NORC), and father's occupational prestige (NORC). Beaton (1975) obtained an R^2 of only .111 in regressing "work enjoyability" on mental aptitude, education, occupational group, and seven interaction terms; for his regression of "interesting work" on the same variables, the R^2 was only .149. This new evidence, and reanalysis of past findings (in Jencks, 1972), strongly suggests that objective (education, status, earnings) and psychological (satisfaction) work rewards are substantially independent of one another.

Despite this more recent evidence, however, it may nevertheless be premature to dismiss the importance of career achievements for the determination of subjective work outcomes. Kalleberg (1974) has shown that estimates of socioeconomic achievement effects are sensitive to measurement error in both the achievement and the satisfaction variables. There is evidence, moreover, that socioeconomic achievement influences subjective work outcomes non-linearly or in interaction (Parnes, et al., 1968; Beaton, 1975; Kalleberg and Sorenson, 1973; Quinn, Staines, and McCullough, 1974). Finally, different indicators of subjective work outcomes, as well as different dimensions of work satisfaction, are differentially affected by the career achievement variables (Quinn, Staines, and McCullough, 1974; Jencks, et al., 1972; Kalleberg, 1974).

These complications, therefore, belie any simple evaluation of socioeconomic achievement effects on subjective work outcomes and generally function to underestimate such effects. Moreover, those regression-based studies which report small effects are flawed in some way. For example, Hodge's (1970) results are based on a single, widely criticized indicator of work satisfaction (see discussion in Chapter 2). Kalleberg's (1974) conclusions are based on an unrepresentative, geographically limited sample and are confined to four indicators of overall satisfaction. Beaton's (1975) sample, the National Bureau of Economic Research -

Thorndike sample of males who passed a battery of tests administered to prospective American pilots and navigators in 1943, is unrepresentative and includes only men employed in three occupations. Additionally, Beaton's regression equation did not include earnings. This is doubly unfortunate as only Beaton examined the importance of achievement interaction effects on work satisfaction.

Clearly, then, the extent to which subjective work outcomes derive from the socioeconomic achievements remains an open issue. Five problem areas have been identified which obscure interpretation of the available research: (1) nonrepresentative, peculiar samples; (2) simplistic and incomplete data analysis; (3) lack of attention to potentially important career achievement interactions; (4) the attenuating effect of measurement error in both achievement and satisfaction; and (5) a primary concern with "work satisfaction" to the exclusion of other subjective work outcomes. In the first set of analyses to be performed in this chapter, I attempt to deal with these problems.

7.2 Achievement and Satisfaction

My interest here is simply to ascertain the degree of dependency of a variety of work satisfaction indicators on career attainments. I first posit a linear and additive model, where all variables are assumed to be perfectly measured. Model 1, then, is:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_1,$$

where the equation is estimated separately for each of 13 different indicators of the perceived quality of work (Y). X_1 is educational attainment, X_2 is occupational status, and X_3 is annual earnings. The regression results are presented (in standard form) in Table 7.1.

While some effects are modest in magnitude (i.e.; the influence of earnings on satisfaction with salary), the general pattern of regression coefficients and R^2's indicates the relative unresponsiveness of subjective achievement, as measured by numerous alternative indicators, to socioeconomic achievement. Before concluding, however, that success in the labor market does not appreciably affect work satisfaction, I must deal with the complexities discussed above, the first of which is the influence of nonlinearities. Therefore, I modify Model 1 to include three polynomial and four interaction terms. Model 2, then, is:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_1 X_2 + \beta_5 X_1 X_3 + \beta_6 X_2 X_3 + \beta_7 X_1 X_2 X_3 + \beta_8 X_1^2 + \beta_9 X_2^2 + \beta_{10} X_3^2 + \varepsilon_2.$$

TABLE 7.1

Standardized Regression Estimates of the Dependence of 13 Subjective Work Outcomes on Socioeconomic Achievement (N=795)

Satisfaction with:	EDUCATION	OCCUPATIONAL STATUS	EARNINGS	R^2
(1) TYPE OF WORK	.018	.109*	.107*	.0319
(2) SALARY	-.095*	.004	.271*	.0732
(3) FIRM	-.135*	.122*	.094*	.0223
(4) OVERALL	-.042	.063	.126*	.0199
(5) PRIDE IN WORK	.050	-.011	.125*	.0192
(6) OTHER WORK	-.124*	-.041	.166*	.0426
My work is:				
(1) COMPETITIVE	-.149*	.091*	.208*	.0544
(2) CREATIVE	.073	.127*	.102*	.0517
(3) IMPORTANT	-.001	.058	.064	.0090
(4) INTERESTING	.033	.135*	.058	.0321
(5) CHALLENGING	.081	.135*	.101*	.0574
(6) HELPFUL	.149*	.139*	.006	.0669
(7) USEFUL	.175*	.094*	.042	.0653

*Coefficient at least two times its standard error.

where Y, X_1, X_2, and X_3 are defined as above. The multiplicative terms represent new variables constructed as the product of the original variables. Thus Model 2 evaluates the importance for work attitudes of marginal increments in educational attainment, occupational status, and earnings, as well as the effects of the interactions among the three regressors. I test for the significance of these seven additional variables by assessing the degree to which explained variation in work outcomes is increased over that due to Model 1 (Cohen. 1968).

Table 7.2 shows that Model 2 provides only slightly more explanatory power than does the considerably more parsimonious Model 1. The increments to R^2 are non-significant for all of the dimensions of work satisfaction (items 1-3) and for all the indicators of overall work attitudes (items 4-6). Additionally, only three of the seven evaluative statements regarding specific work characteristics, COMPETITIVE, CREATIVE, and USEFUL, appear to be significantly influenced by nonlinear and nonadditive achievement effects. Even these effects are rather modest, however, as the actual increment to explained variance never exceeds 2.5 percent.

Although the nonlinear and interactive career effects are significant for three of the thirteen dependent

TABLE 7.2

Summary of Tests for Nonlinear and Interactive Socioeconomic Achievement Effects on 13 Subjective Work Outcomes (N=795)

	R^2's for Model: (1) LINEAR ADDITIVE	R^2's for Model: (2) NONLINEAR INTERACTIVE	F-RATIO (1) vs. (2)
Satisfaction with:			
(1) TYPE OF WORK	.0319	.0416	1.134
(2) SALARY	.0732	.0792	.730
(3) FIRM	.0223	.0387	1.911
(4) OVERALL	.0199	.0275	.876
(5) PRIDE IN WORK	.0192	.0322	1.505
(6) OTHER WORK	.0426	.0674	2.410
My work is:			
(1) COMPETITIVE	.0544	.0787	2.954*
(2) CREATIVE	.0517	.0757	2.908*
(3) IMPORTANT	.0090	.0231	1.616
(4) INTERESTING	.0321	.0416	1.110
(5) CHALLENGING	.0574	.0752	2.155
(6) HELPFUL	.0669	.0763	1.140
(7) USEFUL	.0653	.0882	2.813*

*$p < .01$

variables, the substantive importance of such complexities is small. The average increment to R^2 due to the addition of seven variables is only .015.[3] Moreover, these dependent work attitudes are not statistically independent and, therefore, inferences from univariate F tests for each dependent variable may be misleading (Kerlinger and Pedhazur, 1973). It is possible to evaluate the explanatory power of Model 1 and Model 2, and thus the incremental power of Model 2, on all dependent measures considered as a single set by the use of the "redundancy coefficient" (see Stewart and Love, 1968; Cooley and Lohnes, 1971).[4] The redundancy coefficient associated with Model 1 is .0431, indicating that about 4.3 percent of the variance in the overall covariance structure of the 13 dependent measures may be attributed to the linear and additive effects of education, occupation, and earnings. Model 2 yields a redundancy coefficient of .0576. Thus, the addition of seven nonlinear and interactive variables increases the explained variance in the set of dependent work outcomes by only .0145, which is not significant ($F = 1.75$, $p > .05$). This additional test of the importance of nonlinear and interactive effects leads me to conclude that the more parsimonious linear and additive model adequately represents the impact of socioeconomic achievements on subjective work outcomes.

Having ascertained that the career achievement variables operate linearly and additively, I corrected for random measurement error in the three attainment variables. Since I have no independently derived reliability data for education, occupation, and earnings, I use the reliability estimates derived by Siegel and Hodge (1968). Their estimates of the reliability of self-reports of education, occupation, and income (not earnings) for white adult males are .933, .861, and .852, respectively. My correction procedure assumes that the measurement error in the three career achievement variables is random and, moreover, that the subjective work outcomes are perfectly measured.[5] While the first assumption may be tenable, the second is not. Later in this chapter, I estimate a model which relaxes both of these assumptions.

Correcting for random measurement error in education, occupational status, and earnings makes so little difference in the parameter estimates or in the R^2's that a presentation of the corrected data would be pointless. After correcting the observed correlations, for example, the redundancy coefficient, assessing the explained variance in the set of work outcomes, is only .049, while the redundancy index based on the observed interrelationships is .043. Thus, the rather small effects of socioeconomic achievement on subjective work outcomes are likely not attributable to random measurement error in education, occupation, and earnings.

As noted above, I have thus far assumed that the subjective work outcomes are perfectly measured, an assumption which is probably incorrect (see, for example, Robinson, et al., 1969 and Kalleberg, 1974). Because so little research has attempted to assess the reliabilities of items such as these, I cannot incorporate into my models the reliability estimates of past studies. Moreover, since these attitudes were measured only once in this data set, I do not have available test-retest correlations which might be used as reliabilities.

One method of obtaining reliability estimates of clusters or groups of these items would be to scale these attitudes, either a priori or based on some scaling technique such as exploratory factor analysis, and calculate the internal consistency of the scale (Cronbach, 1951; Heise and Bohrnstedt, 1970). Using the internal consistency coefficient as an estimate of the scale's reliability, the observed correlations could be corrected for attenuation and the regression equations re-estimated. This procedure, however, has limitations. First, it assumes random measurement error among the scaled items and between the independent and dependent variables (Stanley, 1971). Second, the reliability of the individual items comprising the scale,often an important piece of information, is not readily available. Finally, it is not possible to detect indicator "invalidity" or item contamination, which occurs when an item measures more than one theoretical construct (see the discussion in Kalleberg, 1974).

A more powerful and flexible technique for evaluating the consequences of using fallible, observed measures of unobserved variables is confirmatory factor analysis (Burt, 1973; Joreskog, 1973). Confirmatory factor analysis differs from exploratory factor analysis in that the former technique necessitates an a priori specification of the causal relations among all (unobservable and observable) variables and structural disturbances. The correlations(or variances and covariances) implied by the theoretical structure are then computed and, if the model is overidentified, a goodness-of-fit test is performed. If the model is judged misspecified, theoretically-valid alterations in the presumed structure can be made and new goodness-of-fit tests

TABLE 7.3

Standardized Effects of "True" Education, "True" Occupational Status, and "True" Earnings on Four Unobservable Subjective Work Outcomes
(N=795)

	CHALLENGING WORK	USEFUL WORK	WORK SATISFACTION	PRIDE
EDUCATION	.050	.200*	-.081*	.054
OCCUPATIONAL STATUS	.187*	.168*	.095*	-.020
EARNINGS	.105*	.022	.143*	.135*
R^2	.073	.118	.028	.022

*Coefficient at least twice its standard error.

performed.

Using exploratory factor analytic techniques to ascertain the dimensionality of the 13 indicators of subjective work outcomes, I found that the observed covariances among the set of items could be reasonably accounted for by four factors. I identified these factors as "challenging work" (items 1 through 5 in the bottom half of Table 7.1), "helpful work" (items 6 and 7 in the same section of that table), "work satisfaction" (items 1 through 4 and item 6 in the top half of Table 7.1), and "pride" (item 5 in the top half). I then specified a structural model linking these four subjective achievements[6] to schooling, occupational status, and earnings. Furthermore, I assumed that the structural disturbances among the four unobservable outcomes were correlated, reflecting common determinants of these variables not included in the model but assumed orthogonal to the tangible career achievements. A "measurement model," linking the unobserved concepts to their observed indicators, was also specified. The reliabilities for education, occupation, and earnings were again the Siegel-Hodge estimates and these were "fixed" in the analysis. Except for the concept "PRIDE," for which I had only a single indicator assumed perfectly reliable (i.e.; "fixed" at 1.0), the reliabilities of the other observed indicators were estimated by the confirmatory factor analysis. I initially assumed only random error and found that the model did not reproduce the observed covariances.

I then began to search systematically for "item invalidity," a particular form of non-random measurement error whereby observed indicators measure more than a single concept. I was directed in this task by Kalleberg's (1974) finding that certain observed satisfaction and perceived job characteristics items are directly affected by the three career achievement variables; i.e.; that the effect of socioeconomic achievement is not entirely mediated by the unobserved conceptual subjective outcomes. A model incorporating Kalleberg's assumptions was then estimated but it, too, proved an inappropriate fit to the observed data. Finally, guided by the results of the aforementioned exploratory factor analysis, I also assessed the degree to which observed satisfaction or job attribute indicators measured more than one unobservable, or conceptual, subjective outcome. A final model incorporating both modifications of Kalleberg's (1974) hypotheses and the results of the above search was specified; the estimation was

TABLE 7.4

Maximum Likelihood Estimates of "Measurement Model":
Factor Loadings among Unobservable Factors and 14 Observable Indicators (N=795)

	"TRUE" EDUCATION	"TRUE" OCCUPATIONAL STATUS	"TRUE" EARNINGS	CHALLENGING WORK	USEFUL WORK	WORK SATISFACTION	PRIDE IN WORK
EDUCATION	.966*						
OCCUPATIONAL STATUS		.928*					
EARNINGS			.923*				
COMPETITIVE	-.167		.191	.371			
CREATIVE		.080		.520			
IMPORTANT				.453	.125		.151
INTERESTING				.806			
CHALLENGING				.859			
HELPFUL					.783		
USEFUL					.753		
OVERALL						.933	
PRIDE IN WORK							.997
OTHER WORK	-.086	-.106	.122			.537	
SUMMARY**			.109			.784	

**SUMMARY is the sum of satisfaction with TYPE OF WORK, FIRM, and SALARY.

*Estimate fixed

X^2 ,$_{46}$df = 70.07   p = .013

performed by the maximum likelihood method (Christ, 1966). Given the relatively large sample size and the large number of overidentifying restrictions implied by the structure of the specified relationships, the model appears to fit the observed data reasonably well ($\chi^2_{46df} = 70.07$; $p = .013$).

The relationships among the unobservable (or "conceptual" variables) are presented in Table 7.3, and the results of the"measurement model" are presented in Table 7.4. The epistemic relationships between the unobservable concepts and their observable indicators, while interesting,will not be discussed because my primary concern here is with the relationships among the conceptual variables. Suffice it to say that the import of the relationships among the conceptual variables is remarkably invariant across a variety of assumptions linking concepts and indicators. Even after correcting for measurement error (both random and nonrandom) in both explanatory and dependent variables, we see that these four dimensions of the perceived "goodness" of work are only weakly determined by socioeconomic achievement. The R^2's are very low, ranging from .022 (PRIDE) to .118 (USEFUL), and the regression coefficients are generally small. Additionally, I should note that these effects are probably incorrectly estimated due to the omission of variables which may be correlated with both career attainments and subjective work outcomes (e.g.; training, experience, and work characteristics). Given that the probability of specification error is great, I defer discussion of the individual coefficients until the results of a more elaborate model are presented.

I have investigated this issue of the dependence of subjective achievement, or psychological success, on the objective attainments of educational certification, occupational position, and earnings in such detail precisely because of the voluminous yet inconclusive literature surrounding this topic. With these analyses, I have attempted to deal with each of the problem areas identified above, which bear repeating here: (1) inadequate analytic procedures; (2) nonlinear and interactive relationships among attainment variables; (3) measurement error and item contamination; and (4) excessive concern with "work satisfaction," per se, and a corresponding neglect of other evaluative statements about work. I assessed the impact of nonlinearities, utilized a variety of indicators of work attitudes, and corrected for random and nonrandom measurement error in all variables. The EEO sample is not representative of all employed men and, therefore, I cannot state definitively that my results are not appreciably affected by sampling biases. Nevertheless, the data are from a national sample and, therefore, are not affected with the more obvious limitations of studying men employed only in one firm or locality (e.g.; Kalleberg, 1974).

I hoped by this exercise to answer three interrelated questions: Does the socioeconomic achievement process yield a sharply delineated path of rewards -- progressing from the objective to the subjective? Do inequalities in the distribution of career achievements necessarily result in inequalities in the distributions of the socioemotional rewards of work? Are labor markets structured so that there is rigid consistency between objective and subjective work outcomes? After allowing for all of the complexities discussed above, I conclude that the answer to the above questions is no in every case. In general, men perceive their jobs to be satisfying, useful, and challenging for reasons other than their previous career achievements. Given policy concerns with enhancing worker satisfaction, these data, I think, have important implications. Discontent in the work place cannot be appreciably affected simply by marginal increases in education, "status," or pay. These results also suggest that an understanding of the processes determining worker satisfaction must move beyond the narrow concerns of socioeconomic achievement. In section 7.3, below, therefore, I consider whether (and if so, how) a variety of background and schooling mechanisms, work characteristics, and labor market experiences affect psychological success in the workplace.

7.3 A Processual Model of Psychological Success

The dependent variables in this analysis are two individual items representing satisfaction with specific facets of work, SALARY and FIRM, and two multi-item scales, HELPFUL WORK and CHALLENGING WORK. The first composite consists of the sum of items 6 and 7 listed under "My work is..." in Table 7.1, while the second composite is the sum of items 2 through 5 of the same section of the table.

The analyses presented in Tables 7.1, 7.3, and 7.4 provide the rationale for choosing these particular outcome variables. The construct PRIDE IN WORK, for example, was the least sensitive of the four unobservable outcomes to career attainments (Table 7.4) and preliminary regression results indicated it also was almost totally unresponsive to social background and schooling and labor market experience. It was not retained, therefore, for further analysis. The item labelled COMPETITIVE, in Table 7.1, was not scaled because the results of both an exploratory factor analysis, not presented here, and the confirmatory factor analysis suggested it may measure something other than the concept under consideration, i.e.; challenging work (see Table 7.4). Finally, the coefficients presented in Table 7.1 demonstrate that satisfaction with different aspects of work is differentially affected by socioeconomic achievement. These important differences are masked if a single or global indicator is used to tap satisfaction (see Table 7.1) and, therefore, I employ both FIRM satisfaction and SALARY satisfaction. The CHALLenging work scale probably taps satisfaction with the actual conditions of work better than does the single item TYPE OF WORK; thus, the latter indicator is not employed in subsequent analysis. The explanatory variables included in these equations are all of those discussed in Chapter 6 (see Table 7.5).

The results of the analyses presented in Table 7.2 indicate that the assumption of linearity is tenable. I also assume perfect measurement of all variables. The data presented in Table 7.4 suggested that while error, both random and nonrandom, exists, its substantive import is rather small. Ordinary least squares techniques, therefore, are appropriate to estimate these structural equations. Since the psychological success items have no intrinsically

TABLE 7.5

Variable Descriptions, Means, and Standard Deviations of All Variables Used in Chapter 7

Variable Symbol	Variable Description	N=455 $\overline{X}$	σ
FAOCC	Father's occupation	40.60	21.68
FAED	Father's education	10.17	3.69
MOMED	Mother's education	10.74	3.06
PARINC	Parental income	8693	5824
ACQUIS	Material possessions	.04	.88
WEST	Lived in west in 1955	.17	.38
CATHOL	Catholic	.15	.35
JEWISH	Jewish	.03	.17
ABL	Academic ability	7.75	3.89
PEER	Peer college plans	4.96	1.60
PARENT	Parental encouragement	2.24	.67
EDEXP	Educational expectations	1.94	.82
RANK	Senior class standing	1.98	1.34
COLCUR	Senior college track	.44	.50
COURSE	Science and math courses	7.70	4.17
EDUC	Educational attainment	14.59	2.58
PRETERMEXP	Experience acquired during schooling process	5.57	4.59
OTHEREXP	Post-schooling, previous work experience	3.04	3.61
ON-JOB	Training acquired on current job	1.18	.79
FIRMEXP	Post-schooling, current job experience	4.50	3.91
SUPPLY	Annual hours worked	2415	594

TABLE 7.5
(continued)

Variable Symbol	Variable Description	$\overline{X}$	σ
OCC	Occupational status	54.28	23.24
COMPLEX	Complexity of work with people, data, and things	.52	.72
REQUISITE	Skill and training demands of occupation	25.87	5.41
EARN	Annual earnings	11418	4907
HELPFUL	Respondent's job perceived as socially useful	3.78	1.26
CHALL	Respondent's job perceived as challenging	16.82	1.99
FIRM	Satisfaction with firm	3.96	1.03
SALARY	Satisfaction with salary	3.61	.99

meaningful metrics, I present only the standardized regression coefficients. Moreover, because the social background and schooling influences on most dimensions of subjective work outcomes are so trivial, I present only selected reduced form coefficients. Let me now turn to a discussion of the results, which are based on data from 455 respondents (see Table 7.6).

One of the primary purposes of this investigation is to ascertain the degree to which inequalities in social background create, or result in, inequalities in psychological success in the work place. My results suggest that none of the subjective outcome measures are appreciably affected by social origins. The amount of explained variation is extremely small, ranging from 1.1 (SALARY) to 2.7 percent (challenging work - CHALL). Identically specified equations for the more "tangible" achievements of educational certification, occupational status, and earnings produced coefficients of determination of 23, 16, and 10 percent respectively. The attainment of work which is perceived to be socially useful, challenging, and satisfying thus appears to be, by a considerable margin, the most egalitarian of career or labor market outcomes. It should be remembered, moreover, that it was precisely these values which were identified by a sizeable minority of the men studied here as "most" important.

Of all the variables intervening between background and educational attainment, only the net effect of PEER on satisfaction with firm is large enough to warrant interpretation (column 24). The peer plans item was included in the 1955 schedule and, therefore, the effect is not simply a function of contiguity of questionnaire items. Apparently, involving oneself, while in high school, in a network of ambitious peers results in development of certain enduring social skills -- the ability to "get along" with others, perhaps -- which facilitate integration into and satisfaction with one's work environment (including peers at work). Otto (1976) reports that adolescent social integration, as measured by high school participation in peer activities, registers notable affects on adult social participation and integration, even net of education, occupation, and income. Otto and Featherman (1975), moreover, report that the same measure of peer involvement positively and significantly affects global work satisfaction, again net of the conventional indicators of socioeconomic achievement. It is interesting to note that the data utilized by Otto and Featherman were longitudinal, also involving instruments administered 15 years apart.

The net PEER effect reported here, together with the results presented by Otto and Featherman, suggest an intriguing line of further research on the determination of work satisfaction. Satisfaction with work environments, but perhaps not with particular facets of work, may involve participation with colleagues at work, or integrating oneself in the interpersonal aspects of work (see Form, 1972). Neither Otto and Featherman nor I have data on this variable, which pertains to the behaviors of adults at work, but our evidence does suggest that this "social skill" may partially depend on comparable behaviors or experiences as an adolescent.

The data presented in Table 7.6 explain, to some degree at least, why inferences from past studies concerning the influence of education on work satisfaction have been confusing and often conflicting. Education has no marked influence on satisfaction with salary (column 32), and enhances attainment of challenging work only indirectly (column 10), by affecting occupational placement (column 11). Schooling does, however, influence the degree to which a worker perceives his work to be HELPFUL and his satisfaction with his firm. But it registers contradictory effects on these two subjective outcomes. That is, educational certification enhances the degree of perceived utility of work, but depresses satisfaction with firm. These rather interesting results deserve some commentary.

Schooling registers a rather strong reduced form effect on USEFUL (column 2), of which about half is due to the intervening influence of either occupational status or work characteristics. Insofar as societal utility or the "functional importance" of an occupation is tapped by status, complexity or skill demands, then educational attainment may, in fact, serve to allocate men into more or less demanding occupational roles (e.g.; the professions). The net or structural influence is open to interpretation. On the one hand, this effect may simply represent actual job differences within occupational categories. On the other hand, the net schooling coefficient probably represents particular beliefs and attitudes acquired by highly educated workers in the course of their professional training (Moore, 1969). These work-related beliefs could include, for example, "service orientations" or values about the utility of schooling. Hence, highly educated individuals may be more apt to state that their jobs are useful, regardless of actual work characteristics.

The structural estimate of the effect of schooling on firm satisfaction is modestly negative (column 24) and

TABLE 7.6
Standardized Regression Estimates of the Dependence of 4 Subjective Work Outcomes on Background, Schooling, and Labor Market Experiences and Labor Market Success (N=455)

Predetermined Variables	(1) HELPFUL	(2) HELPFUL	(3) HELPFUL	(4) HELPFUL	(5) HELPFUL	(6) HELPFUL	(7) HELPFUL	(8) HELPFUL
FAED	.000	-.038	-.024	-.024	-.033	-.032	-.031	-.030
MOMED	.063	.044	.016	.014	.012	.009	.012	.009
FAOCC	.016	-.053	-.065	-.063	-.048	-.046	-.052	-.050
PARINC	.024	.029	.030	.025	.027	.022	.026	.022
ACQUIS	.064	.024	.034	.029	.034	.029	.036	.031
WEST	.014	.046	.063	.065	.075	.076	.076	.078
CATHOL	-.060	-.059	-.039	-.042	-.042	-.044	-.040	-.043
JEWISH	.021	-.038	-.044	-.048	-.045	-.050	-.046	-.050
ABL		-.001	-.016	-.014	.007	.008	.001	.003
PEER		.038	.015	.015	-.002	-.002	-.006	-.006
PARENT		.068	.068	.065	.044	.040	.046	.043
EDEXP		-.074	-.071	-.068	-.061	-.059	-.064	-.062
RANK		-.120*	-.108	-.110	-.096	-.098	-.094	-.096
COLCUR		.019	.001	.005	-.025	-.021	-.026	-.022
COURSE		.035	.001	-.002	.032	.029	.022	.020
EDUC		.304*	.227*	.222*	.170*	.166*	.159*	.156*
PRETERMEXP		-.013	.041	.041	.050	.050	.049	.049
OTHEREXP		-.019	.080	.078	.064	.062	.070	.067
ON-JOB			-.015	-.020	-.003	-.008	-.008	-.012
FIRMEXP			.102	.094	.124	.116	.129	.122
SUPPLY			.201*	.196*	.155*	.151*	.160*	.155*
OCC			.203*	.198*	----	----	.074	.072
COMPLEX				----	.321*	.322*	.306*	.308*
REQUISITE				----	.024	.018	-.003	-.008
EARN				.034	----	.033	----	.031
R^2	.023	.088	.154	.155	.203	.204	.205	.206

*Coefficient at least twice its standard error.

TABLE 7.6
(continued)

Predetermined Variables	(9) CHALL	(10) CHALL	(11) CHALL	(12) CHALL	(13) CHALL	(14) CHALL	(15) CHALL	(16) CHALL
FAED	-.061	-.074	-.061	-.061	-.077	-.074	-.074	-.071
MOMED	.078	.073	.052	.040	.056	.044	.056	.044
FAOCC	.005	-.041	-.055	-.047	-.049	-.040	-.054	-.045
PARINC	.022	.032	.033	.011	.046	.021	.045	.022
ACQUIS	.045	.009	.021	-.004	.019	-.004	.022	-.001
WEST	-.068	-.042	-.025	-.016	-.011	-.004	-.009	-.002
CATHOL	-.104*	-.087	-.067	-.081	-.068	-.082	-.066	-.080
JEWISH	-.049	-.072	-.077	-.098*	-.079	-.099*	-.081	-.100
ABL		-.035	-.048	-.040	-.032	-.025	-.038	-.031
PEER		.032	.012	.013	.017	.016	.012	.011
PARENT		.122*	.120*	.105	.110*	.095	.112*	.098
EDEXP		-.093	-.098	-.087	-.088	-.079	-.092	-.082
RANK		-.056	-.035	-.046	-.043	-.050	-.040	-.048
COLCUR		.010	-.008	.015	-.014	.006	-.016	.005
COURSE		.101	.072	.058	.096	.081	.083	.070
EDUC		.121	-.013	-.038	-.058	-.076	-.072	-.088
PRETERMEXP		-.013	-.018	-.016	-.012	-.010	-.014	-.012
OTHEREXP		.030	.020	.009	.010	-.000	.017	.006
ON-JOB			-.063	-.085	-.055	-.076	-.061	-.081
FIRMEXP			-.010	-.047	-.008	-.042	-.000	-.035
SUPPLY			.196*	.170*	.163*	.142*	.169*	.147*
OCC			.200*	.179*	----	----	.096	.088
COMPLEX				----	.121	.124*	.102	.107
REQUISITE				----	.155*	.125*	.121	.094
EARN				.163*	----	.155*	----	.153*
R^2	.027	.060	.121	.142	.133	.152	.137	.155

*Coefficient at least twice its standard error.

TABLE 7.6
(continued)

Predetermined Variables	(17) FIRM	(18) FIRM	(19) FIRM	(20) FIRM	(21) FIRM	(22) FIRM	(23) FIRM	(24) FIRM
FAED	-.025	-.000	.011	.012	.005	.007	.012	.013
MOMED	-.060	-.062	-.081	-.087	-.084	-.091	-.084	-.090
FAOCC	-.001	-.012	-.026	-.023	-.010	-.006	-.021	-.017
PARINC	.050	.057	.065	.055	.062	.049	.061	.049
ACQUIS	.018	.016	.023	.011	.017	.004	.023	.011
WEST	-.100*	-.092	-.072	-.067	-.073	-.070	-.070	-.067
CATHOL	-.093*	-.056	-.041	-.048	-.045	-.053	-.041	-.048
JEWISH	-.023	-.025	-.027	-.036	-.024	-.034	-.027	-.036
ABL		-.070	-.080	-.076	-.060	-.056	-.075	-.071
PEER		.162*	.146*	.146*	.149*	.148*	.138*	.137*
PARENT		.039	.043	.036	.030	.022	.036	.028
EDEXP		-.075	-.085	-.080	-.075	-.070	-.083	-.078
RANK		.032	.042	.037	.043	.039	.049	.045
COLCUR		-.079	-.093	-.082	-.100	-.088	-.102	-.092
COURSE		.113	.073	.066	.106	.098	.079	.072
EDUC		-.062	-.170*	-.181*	-.151	-.161	-.183*	-.192*
PRETERMEXP		.012	.006	.007	.012	.013	.008	.009
OTHEREXP		.075	.080	.075	.062	.056	.077	.071
ON-JOB			.029	.019	.045	.033	.032	.022
FIRMEXP			.007	-.010	.001	-.018	.016	-.001
SUPPLY			.117*	.105*	.094	.082	.106*	.095*
OCC			.242*	.232*	----	----	.214*	.209*
COMPLEX				----	.145*	.147*	.103	.105
REQUISITE				----	.047	.030	-.030	-.044
EARN				.076	----	.084	----	.078
R^2	.022	.063	.108	.113	.096	.102	.114	.118

*Coefficient at least twice its standard error.

TABLE 7.6
(continued)

Predetermined Variables	(25) SALARY	(26) SALARY	(27) SALARY	(28) SALARY	(29) SALARY	(30) SALARY	(31) SALARY	(32) SALARY
FAED	-.003	.003	-.002	-.001	-.014	-.009	-.014	-.010
MOMED	.019	.044	.045	.026	.052	.032	.052	.032
FAOCC	-.011	-.009	-.010	.002	-.015	-.002	-.014	-.001
PARINC	.077	.098	.101	.066	.117*	.078	.117*	.078
ACQUIS	-.047	-.020	-.018	-.057	-.018	-.055	-.018	-.056
WEST	-.073	-.070	-.066	-.051	-.053	-.042	-.053	-.042
CATHOL	-.011	.005	.003	-.020	.004	-.018	.004	-.018
JEWISH	.016	.017	.012	-.021	.008	-.022	.009	-.022
ABL		.019	.011	.024	.015	.025	.015	.027
PEER		.034	.026	.027	.034	.032	.035	.033
PARENT		.023	.025	.001	.025	.003	.025	.002
EDEXP		-.105	-.095	-.078	-.091	-.076	-.091	-.075
RANK		-.026	-.035	-.052	-.047	-.059	-.047	-.060
COLCUR		-.160*	-.160*	-.124	-.157*	-.124	-.157*	-.123
COURSE		.128*	.118	.096	.121	.097	.122	.100
EDUC		.058	.099	.060	.057	.028	.058	.032
PRETERMEXP		-.076	-.008	-.005	-.006	-.004	-.006	-.004
OTHEREXP		.027	.117	.009	.118	.102	.118	.100
ON-JOB			.024	-.010	.023	-.011	.024	-.010
FIRMEXP			.142	.083	.141	.087	.141	.085
SUPPLY			-.031	-.072	-.045	-.080	-.045	-.081
OCC			.058	.025	----	----	-.008	-.022
COMPLEX				----	-.017	-.012	-.015	-.007
REQUISITE				----	.143*	.095	.146*	.103
EARN				.258*	----	.248*	----	.248*
R^2	.011	.044	.055	.107	.064	.111	.064	.111

*Coefficient at least twice its standard error.

more than twice as large as the reduced form estimate (column 18). Net of occupational status and/or work complexity and skill requisites, education actually depresses this dimension of psychological success. Kalleberg (1974) reported a similar finding, which probably reflects the unfulfilled occupational or economic aspirations of highly educated men at given levels of achievement within their company or firm. The small depressant influence of on-the-job training on challenging work (column 16) may reflect similar processes: men who receive training through formal academic schooling or informal job learning are, at constant levels of actual achievement, somewhat dissatisfied either because (a) their tasks are not commensurate with their skills or (b) they feel that their places of employment do not offer rewards equal to the "costs" of training (see also Berg, 1970).

Generally, the various components of labor force experience and training only marginally affect the psychological rewards of work. Firm experience, by its positive influence on earnings, indirectly enhances satisfaction with pay (column 27). Experience acquired during the schooling process (PRETERMEXP) affects no subjective work-related outcome. It seems, then, that this component of labor market experience has no observable labor market consequences. The results presented in Chapters 5 and 6 indicated that such experience did not enhance occupational status, the attainment of complex or skilled work, or earnings. We see now that it does not facilitate the actualization of important work values either.

While not influencing work satisfaction, per se, supply does appear to enhance the attainment of work judged useful and challenging. The interpretation of this effect is ambiguous. In order to justify relatively long work hours, individuals may perceive their efforts as being useful to others and intellectually stimulating to themselves. On the other hand, labor supply may serve as a proxy for some attribute of the job which induces these perceptions in job incumbents but which does not covary with status, complexity, or skill demands.

The two work characteristics studied here, COMPLEX and ROUTINE, while highly correlated, clearly do not operate as a unidimensional construct. Complexity, for example, strongly enhances attainment of helpful work (column 5), while modestly affecting challenging work (column 13) and firm satisfaction (21). Even net of skills requisites, occupational status, and earnings, complex work, i.e.; work which demands interpersonal and intellectual skills, is thought to be more satisfying in general (see also Kohn and Schooler, 1973). The large salutary effect of complexity on helpful work probably reflects the "social" component of the complexity measure, a component also present in the helpful work scale.[7]

The skill or training demands of a job and, to a lesser degree, complexity of work, positively affect, not unexpectedly, the attainment of challenging work (column 13). The greater the training demands and the complexity of a job, then, the more likely it is that men will perceive such work to be challenging, creative, and interesting, even net of the job incumbents' personal skills and training. This is quite consistent with the general belief (e.g.; HEW, 1973; Blauner, 1964; Chinoy, 1955) that complex work and demanding work is also more challenging. By enhancing earnings (Chapter 6), REQUISITE also indirectly stimulates satisfaction with pay. The lack of an appreciable positive influence of REQUISITE on helpful work is somewhat puzzling. Some evidence exists (see Rossi, 1972) which suggests that the perceived utility of occupations is highly correlated with their entrance requirements. Such a relationship, in general, parallels functional theories of stratification. Thus, we should expect a somewhat larger net REQUISITE-HELPFUL slope than we actually observe in these data. One reason for the relatively small net effect, however, is due to the collinearity between educational attainment and the skill demands of jobs (r=.601).

The data presented in Table 7.6 suggest that the effects of the substantive complexity of work and training requisites remain unchanged even after controlling for occupational status. This is not true, however, of our assessment of status influences on the psychological rewards of work once controls are added for work characteristics. With the exception of satisfaction with firm (column 24), direct "status" effects on these subjective outcomes are rather small. For example, the salutary effects of status on helpful work and challenging work are reduced by 63 (compare columns 3 and 7) and 52 (compare columns 11 and 15) percent, respectively, when I control for actual work characteristics. Hence, the observations of Blauner (1966) and Seashore and Taber (1975) concerning the direct importance of status are, at best, weakly supported. It is not status, per se, that is important for psychological success, but actual day-to-day routines and training requirements of jobs. These results parallel those discussed in Chapter 6 for earnings. Once more, however, it is quite evident that Duncan's SEI index of occupational achievement would serve reasonably well as a proxy for the two work characteristics employed here.

The final explanatory variable under consideration here, earnings, substantially affects only satisfaction with pay (column 32), though it also modestly enhances the degree to which one's job is perceived to be challenging (column 16). The net influence of economic attainment on satisfaction with pay is, of course, expected. Controlling for a variety of determinants of earnings, including occupational status or attributes, men who earn more generally express more satisfaction with their financial success. Featherman (1972) also reports a net income-economic satisfaction slope of roughly the same magnitude. The lack of a perfect correspondence between objective economic achievement and a worker's evaluation of his economic success is probably due to individual differences in income aspirations or income needs within categories of earnings attainment. Since I do not have data on these variables, I cannot evaluate this speculation.

7.4 Conclusions

The purposes of this chapter were twofold. First, I attempted to assess systematically the degree to which the psychological rewards of work could be predicted from objective labor market success. I attempted to deal with some of the weaknesses of past studies and, in general, I found only a weak correspondence between the two types of market rewards and outcomes. I then concluded that labor markets were not structured so as to make the attainment of psychological achievement heavily dependent on materialistic achievement. Hodge (1970) interprets this "looseness" to mean that different kinds of work yield different sorts of gratifications, thereby providing incentives to all segments of the work force to carry on with society's business. However, the data are also consistent with the Marxian notion of "false consciousness" (e.g.; Bowles and Gintis, 1976). Capitalist society, the argument goes, through its many socializing institutions (but, primarily, the school), "allows" its members to feel satisfied and successful when, in fact, they suffer from alienation and reduced expectations. I am inclined to feel that most survey data, including the data used here, are not equipped to resolve these metatheoretical issues.

Second, I evaluated the degree to which social background, schooling, and labor market experiences facilitate or depress subjective work outcomes. Status origins appeared irrelevant for the determination of work satisfaction, as did most of the schooling processes and mechanisms. It seems, then, that childhood and adolescent statuses and experiences, with but few exceptions, have little to do with psychological success in the labor market.

The four subjective work outcomes studied here also appeared rather unresponsive to on-the-job training, a somewhat surprising finding. I expected specific vocational training to enhance work satisfaction because workers, presumably through such preparation, get direct, realistic information about the nature of their jobs and their work and because they are socialized, at least to some degree, to accept the type of work for which they have been trained (Moore, 1969). My expectation was not supported, and I reasoned that such job preparation may increase expectations about work which then are not realized.

Finally, it is important to note the explained variance in all of these dimensions of psychological success in work organization is rather small. Clearly, then, important variables have been omitted from these equations. A more complete explanation of the distribution of subjective achievement will require data on routinization of work (Blauner, 1964), organizational factors, interpersonal relations at work (Kohn and Schooler, 1973), and, perhaps most importantly, psychological values, aspirations, and motivations about work (Jencks, 1972).

FOOTNOTES

1. The quality of work and the evaluation by workers of their jobs are also thought to be determinants of longevity, some aspects of physical health, and such mental health problems as psychosomatic illness, low self-esteem, anxiety, worry, tension, and impaired interpersonal relations (HEW, 1973; Quinn, Staines, and McCullough, 1974). They have been linked to community and political participation (HEW, 1973; Sheppard and Herrick, 1972), childrearing values and practices (Kohn, 1969), and, somewhat ambiguously, productivity and organizational effectiveness (Brayfield and Crockett, 1955; Perrow, 1970). As with education, occupation, and income, the consequences of nonmonetary work outcomes, therefore, spill over into many dimensions of the lives of individuals.

2. Seashore (1974) further observes that work satisfaction should be included in projections of available manpower in industrial countries and in forecasts of the interplay between supply or demand in labor markets. Flanagan, et al. (1974) estimated a time-series model incorporating this assumption with little success.

3. I also tested the assumption of linearity by using dummy variables representing levels of educational certification, occupational status, and earnings. The results were quite consistent with those obtained with the quadratic terms.

4. There is some debate among psychometricians concerning the utility of the redundancy index (see the discussions in Nicewander and Wood, 1974, 1975 and Miller, 1975). Recognizing some of the limitations of the redundancy measure, Coxhead (1974) introduced a new measure, C^2, for assessing the relationship between two sets of variables. I used Coxhead's index and obtained results identical to the fourth decimal point to that yielded by the redundancy coefficient.

5. I must also assume that the reliability estimates reported by Siegel and Hodge (1968) are applicable to the EEO sample. Although the practice of using the Siegel-Hodge coefficients for populations or samples other than the one from which they are derived is rather common (see, for example, Duncan, Featherman, and Duncan, 1972; Featherman, 1972; Kelly, 1973a), it has pitfalls

(Featherman, 1973; Kelly, 1973b).

6. Because the computer program LISREL (Joreskog, 1973) could handle only 15 variables, I created a composite index of satisfaction by summing TYPE OF WORK, SALARY, and FIRM. This new measure, labelled SUMMARY in Table 7.4, was used in confirmatory factor analysis.

7. Disaggregating COMPLEX into its constituent parts, i.e.; complexity of work with people, data, and things, supported this hypothesis.

Chapter 8

SUMMARY AND CONCLUSIONS

8.1 Overview and Implications of Findings

Two questions underlie all of the analyses presented in this study: does social background directly affect material and psychological success in the labor market? And, if so, what are the specific schooling and labor market mechanisms which are responsible for the intergenerational transmission of inequality? Let me conclude this study by briefly reviewing findings which are pertinent to these questions and by commenting on the utility of the various perspectives used to study achievement processes.

I presented the estimates of a "basic model" of the socioeconomic achievement process in Chapter 3. In that chapter, I considered only social background, academic ability, schooling, and occupational status and earnings attainments. Estimation of the "basic model" demonstrated the modest importance of status origins and religious background in influencing adult educational and labor market outcomes, both directly and indirectly. Even net of ability, men with "advantageous" social backgrounds complete more schooling, attain more desirable and higher status jobs, and earn more income. In Chapter 4, I attempted to identify particular "school process" and social-psychological motivations which may serve to mediate these influences of background and to independently stimulate labor market success. Because so much attention has been devoted to social-psychological and school allocation explanations of educational and occupational differentials (e.g.; Lipset and Bendix, 1959; Crockett, 1962; C. Gordon, 1972; Sewell and Hauser, 1975; Kerckhoff, 1974, 1976), it is worth exploring in some detail the utility of this perspective.

The results for Chapter 4 indicate that the school process model accounts for 47 percent of the variance in years of schooling completed, of which about 11 percent is due solely to the social-psychological and academic experience variables. This additional explained variance, which was over and above that attributable to social background and ability, is one measure of the "success" of a school process model. Roughly 25 percent of the inequality in educational attainment, then, uniquely results from adolescent and schooling experiences. Another indication of the "success" of this model is the degree to which it "explains" or "accounts for" the status origin influences on years of schooling completed. Fully 64 percent of the total effect of socioeconomic origins is due to the intervening aptitude, social-psychological, and schooling variables. Hence, the primary, but not exclusive reasons, for the status-origin-education linkage are that men from higher status backgrounds are more able and receive, or are exposed to, more academic supports, either institutional or interpersonal. These results suggest that, even given the undeniable constraints of background and ability, judicious policy intervention in the school process of adolescents or young adults -- for example, by exposing the student to a supportive "learning" environment or facilitating his educational "ambitions" -- could increase their educational attainments and, ultimately, their labor market (especially occupational) achievements.

Somewhat less impressive, but generally comparable, results are obtained for occupational achievement, as indexed either by status (Chapter 4) or complexity of work and training and skill demands (Chapter 6). Background and schooling together account for about 43 percent of the variance in occupational status attainment, of which roughly 4 percent can be uniquely attributed to school process variables. Although only mathematics and science coursework registers a nontrivial structural estimate, all social-psychological and academic experience variables indirectly stimulate occupational advancement via their influence on educational attainment. Consideration of these variables, therefore, presents a more complete picture of the underlying social and psychological processes governing this labor market outcome than would be forthcoming from an analysis of only social-structural variables. Those variables intervening between social background and years of schooling completed mediate approximately half of the influence of status origins on occupational status. Thus, the social processes linking parental social status to son's occupational position are at least partly understood. In this respect, too, the social-psychological model is reasonably "successful."

I should note that these results also have shed new light on the controversy surrounding the presumed efficacy of schooling in affecting adult socioeconomic achievement, in that mathematics and science coursework were found to directly stimulate occupational and earnings attainments. Employers are unlikely to know about such coursework -- except perhaps indirectly through educational certification, which was controlled -- and, therefore, are unlikely to reward job incumbents simply for having taken such courses. It does appear, then, that job-related skills are enhanced by some school mechanisms, a finding more consistent with the "productivity" hypothesis (e.g.; Mincer, 1974; Flanagan, 1974) than with the "screening" hypothesis (e.g.; Arrow, 1973; Collins, 1971). By examining the consequences of school sorting and selection processes, we therefore achieve a better appreciation of why education affects labor market success (e.g.; Blaug, 1972).

The usefulness of this elaborate model, which specifies the impact of many adolescent and school processes, should not be overstated, however, even for education and occupation. Fully half of the variance in educational and occupational achievement remains unexplained. About a third of the status origin effects on both education and occupation, moreover, are direct; that is, are not mediated by any of the intervening variables in the model. While these "unexplained" status origin influences may reflect unmeasured motivational or school process variables, it is equally plausible that the direct social class influences on educational attainment derive from the importance of financial resources for entrance into and continuation in institutions of higher education. If this is indeed true, under existing political structures status origins will always exercise a direct effect on educational certification, and it may be unrealistic for us to expect a "school process" model to fully explain these influences. Finally, the model fails to explain why men from Jewish backgrounds attain significantly more schooling than do Protestant men of equal status and ability. Clearly, then, more research is needed on what happens in families differing in religion or social status (e.g.; Rosen, 1959; Elder, 1962a) and on the reactions of school personnel to students from these varying backgrounds (e.g.; Kerckhoff, 1976).

The deficiencies of a social-psychological interpretation of achievement are even more apparent in the unresponsiveness to adolescent processes of post-schooling market experiences and work's economic and emotional outcomes. Work experience, on-the-job training, and labor supply, which are of demonstrated importance in enhancing earnings (Chapter 5), are almost entirely impervious to social-psychological and school processes, suggesting that such kinds of mechanisms, at least those studied here, have little impact on the acquisition of marketable and valuable skills. Policy initiatives in the area of specific job-related skills and training, therefore, should focus on institutions (e.g.; firms and unions) other than those designed and structured to impart academic skills and knowledge (i.e.; schools).

Virtually none of the effects of background on earnings are mediated or interpreted by adolescent schooling variables; moreover, the inclusion of all social-psychological and academic experience variables adds almost nothing to the explanatory power of my "basic model." With some notable exceptions (the coursework effect, for example), the inclusion in our earnings functions of oft-presumed important schooling variables did not further our understanding of income inequalities. It would appear, then, that Bowles and Gintis's (Bowles and Gintis, 1976; Bowles, 1972, 1973; Bowles and Nelson, 1974; Gintis, 1971) contention that schooling processes merely perpetuate economic inequality from generation to generation is exaggerated, at least for young men early in their socioeconomic careers. A substantial school process earnings effect is necessary for this assertion to be valid and, simply put, the evidence suggesting such a linkage is weak. The distribution of both economic _and_ psychological rewards of work, at least for the EEO men, appears relatively insensitive to schooling processes.

In sum, the utility of the social-psychological approach is limited to educational and occupational status attainment. Economic and psychological outcomes of work are responsive to processes other than those occurring in schools and during adolescence. Thus, in Chapter 5, I explored the extent to which post-schooling experiences affected earnings and whether such"career contingencies" accounted for any of the still significant social background influences on labor market success. Several post-schooling experiences and statuses, i.e.; work experience, on-the-job training, and labor supply, were found to have an appreciable effect on earnings but only small, and largely indirect influences, on subjective work outcomes. Post-schooling "investments in human capital" did explain an additional 8.3 percent of the variance in earnings, or a proportional increase of almost 65 percent, over that attributable to the social-psychological model, which included occupational status.

The results presented in Chapter 5 showed that educational attainment directly depressed length of work experience, both on previous jobs and on current jobs, and the acquisition of on-the-job training. These data suggest the possibility that schooling and vocational training and/or work experience are alternative mechanisms for enhancing the skills or marketability of workers. The attainment of post-schooling training, however, is equally "open" to individuals from all status origins, including the disadvantaged. While about 23 percent of the variance in years of schooling completed is due to social background, only 3 to 5 percent of the inequality of post-schooling "investments" is due to social origins. These statistics, I believe, have important implications for social policy. Given that on-the-job training and labor force experience and supply markedly enhance economic success, and given also that the attainment of such skills is not heavily tied to social background and ability, post-schooling training appears to be an important avenue for the social and economic advancement of men with disadvantaged backgrounds or inferior schooling. This conclusion must be tempered, of course, by consideration of the nature of the EEO sample, which consists of relatively highly educated white men. Flanagan's (1974) study, however, suggests that job seniority and enrollment in vocational programs also enhance the economic achievements of black males. Indeed, Flanagan (1974) reports the marginal value of a year spent in specific training yields greater payoffs for young (ages 15-24) and older (45-59) black males than for comparably aged white males.

Although post-schooling labor market experiences do enhance annual earnings, the fact that such investments are not sensitive to social background implies that training differentials are not responsible for the status origin effects on son's earnings. Only the salutary impact of maternal education was notably reduced by the inclusion of these variables, a finding consistent with human capital interpretations of "home investment" in children (Hill and Stafford, 1974; Liebowitz, 1974a, 1974b). Thus, understanding how sons with high income parents "inherit" their earnings ability requires attention to mechanisms and processes other than "post-schooling human capital investments," at least as I was able to measure such skills.

I should note, however, that the issue of the economic returns to work experience and training are extremely important for correctly estimating the wage returns to educational attainment. In data which exhibit a great deal of age homogeneity, as does the EEO sample, years of schooling completed is constrained to be negatively correlated with length of post-schooling work experience. In the absence of controls for labor force experience, then, the earnings payoffs to schooling are biased downward substantially. In these data, the estimated returns to schooling increased by 69 percent after controlling for these components of labor force experience.

The human capital perspective on socioeconomic inequality, that is, that achievement differentials result from differences in the quantity and quality of a worker's stock of skills, while not explaining how inequality is reproduced from generation to generation, is useful for explicating those processes affecting economic attainments. Moreover, this perspective -- or, at least, the variables employed by human capital theorists -- is necessary for the correct estimation of earnings returns to incremental schooling and allows new insight into how education affects adult attainment. Sociologists interested in the processes governing income attainment and inequality, then, should make every effort to incorporate into their "status attainment" or "socioeconomic achievement" models post-schooling experiences and training.

The final analysis chapter, Chapter 7, was concerned with how men achieve psychological success in the work place. Of particular importance to the purposes of this study, the psychological rewards of work, which it should be remembered correspond quite closely to expressed occupational values of a sizeable proportion of the EEO men, were found to be unaffected by social background. Inequalities in social origins, then, have essentially no bearing, either directly or indirectly, on work satisfaction or the realization of other occupational values. Psychological rewards or subjective outcomes, therefore, are the most egalitarian labor market outcomes studied here. Men can and do achieve psychological success in their work, regardless of their beginning position in the socioeconomic status hierarchy.

Moreover, I also found that the more "tangible" achievements associated with work (occupational status, earnings) or the preparation for work (education), but modestly influenced work satisfaction, pride in work, and perceptions that one's work was helpful to others and challenging to one's self. I concluded from those analyses that labor market rewards were only loosely crystallized, if at all. In a word, different kinds of work provide different kinds of rewards.

More elaborate models of psychological success, containing, for example, a myriad of background, schooling, and labor market experiences, also explained only minor proportions of inequality in psychological success or subjective work outcomes. Neither educational certification nor post-schooling contingencies appreciably affected most socioemotional rewards of work, though schooling did enhance the perception that one's work was socially useful and helpful to others. The "psychological" payoffs to both types of skills, then, are rather small. These data suggest that, as a society, we should not provide workers with education or training in the belief that they will either attain work which they feel is challenging and self-actualizing or work with which they will be satisfied, though there are material incentives for equipping workers with job-relevant skills. Worker alienation and discontent are probably much more responsive to variables not included in this study, such as autonomy in the workplace, the routinization of work, and supervisory styles.

8.2 Conclusion

Socioeconomic inequalities are a very real fact of life in American society; they are quite consequential for the life chances of individuals and, to some degree, are responsible for the psychological well-being and functioning of people. My basic assumption in this study was that inequality in socioeconomic and psychological achievements was partly a phenomenon of life-cycle processes and events. By considering the types of families into which children were born, the kinds of schooling processes which were available to adolescents, and the varieties of labor market activities experienced by adults, I hoped to explain the degree to which and the manner in which social background constrained achievement opportunities and affected adult labor market success.

New information and insights have resulted from this study, I believe, and these were discussed in the appropriate analysis chapters and highlighted in the above discussion. My results, or all too frequently, lack of results, however, amply demonstrate how much remains to be learned regarding achievement processes and inequality.

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